

REPLACEMENT
SHEET

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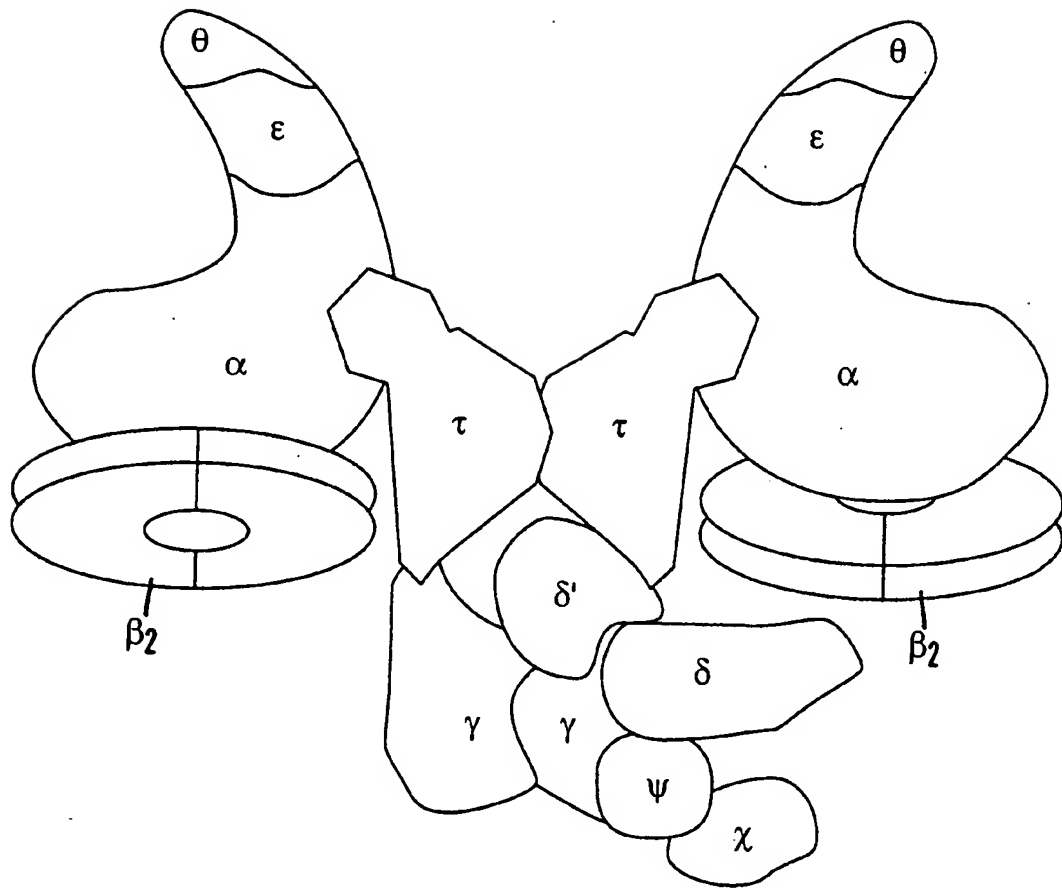


FIG. 1

REPLACEMENT SHEET

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ATP binding

E. coli
B. subtilis

MSYQVLARKWRPQTFADVVGQEHVLTALANGLSLGRIHHAYLFSGTRGVGKTSIARLLAK
MSYQALYRVFRPQRFEDVVGQEHITKTLQNALLQKKFSHAYLFSGPRGTGKTSAAKIFAK
*** *

E. coli
B. subtilis

GLNCETGITATPCGVCDNCREIEQQGRFVDLIEIDAASRTKVEDTRDLLDNVQYAPARGRF
AVNCEHAPVDEPCNECAACKGITNGSISDVIEIDAASNNGVDEIRDIDKVKFAPSAVTY
*** *

E. coli
B. subtilis

KVYLIDEVHMLSRHSFNALLKTLEPPEHVKFLATDPQKLPVTILSRCLQFHLKALDV
KVYIIDEVHMLSIGAFNALLKTLEPPEHCIFILATTEPHKIPLTIIISRCQRFDFKRITS
*** *

FIG. 2

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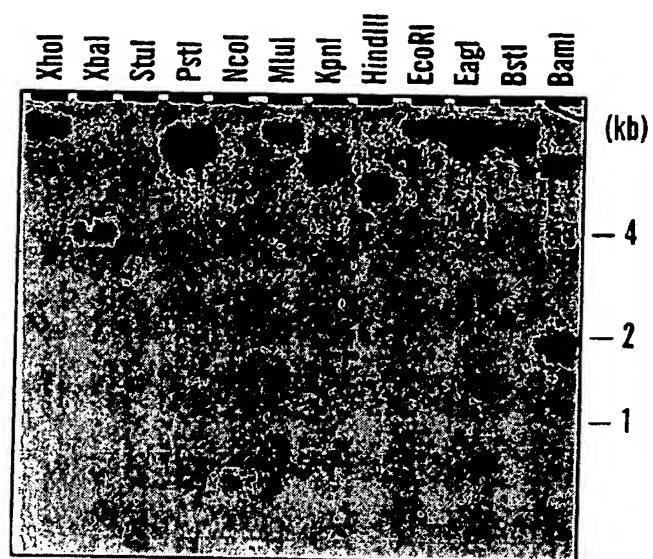


FIG. 3

REPLACEMENT SHEET

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TCCGGGGGTG	GGGTTCCAG	GTAGACCCCG	GCCCCCTCCG	TGAGCCCCCTT	TACCCAGGCC	60
GCCACCTCCT	CCAGGGGGC	CAAGCGTGC	AAGGAGAGGA	ACGTCCGCAC	CACGCCCTAT	120
ACTAGCCCTT	GTG AGC GCC CTC TAC CGC CGC TTC CGC CCC CTC ACC TTC CAG GAG GTG GTG met ser ala leu tyr arg phe arg pro leu thr phe gln glu val val				S.D.	180 (17)
GGG CAG GAG CAC GTG AAG GAG CCC CTC CTC AAG GCC ATC CGG GAG GGG AGG CTC GCC CAG gly gln glu his val lys glu pro leu leu lys ala ile arg glu gly arg leu ala gln					CAC	240 (37)
GCS TAC CTS TTC TCC GGS AC						
GCC TAC CTC TTC TCC GGG CCC AGG GGC GTG GGC AAG ACC ACC ACC GCG AGG CTC CTC GCC ala tyr leu phe ser gly pro arg gly val gly lys thr thr thr ala arg leu leu ala						300 (57)
ATG GCG GTG GGG TGC CAG GGG GAA GAC CCC CCT TGC GGG GTC TGC CCC CAC TGC CAG GCG met ala val gly cys gln gly glu asp pro pro cys gly val cys pro his cys gln ala						360 (77)
GtG CAG AGG GGC GCC CAC CCG GAC GTG GTG GAC ATT GAC GCC AGC AAC AAC TCC GTG val gln arg gly ala his pro asp val val asp ile asp ala ala ser asn ser val						420 (97)
GAG GAC GTG CGG GAG CTG AGG GAA AGG ATC CAC CTC GCC CCC CTC TCT GCC CCC AGG AAG glu asp val arg glu leu arg glu arg ile his leu ala pro leu ser ala pro arg lys						480 (117)
GTC TTC ATC CTG GAC GAG GCC CAC ATG CTC TCC AAA AGC GCC TTC AAC GCC CTC CTC AAG val phe ile leu asp Glu ala his met leu ser lys ser ala phe asn ala leu leu lys					C	540 (137)

FIG. 4A-1

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FIG. 4A-2

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GAG CGC CTC GCC CGC CGC TCC GAC GCC TTA AGC CTG GAG GTG GCC CTC CTG GAG GCG GGA	1140 (337)
glu arg leu ala arg arg ser asp ala leu ser leu glu val ala gly	
AGG GCC CTG GCC GAG GCC CTA CCC CAG CCC ACG GGC GCT CCT TCC CCA GAG GTC GGC	1200 (357)
arg ala leu ala ala glu ala leu pro gln pro thr gly ala pro ser pro glu val gly	
CCC AAG CCG GAA AGC CCC ACC CCG ACC GAA CCC AGG CCC GAG GAG GCG CCC GAC CTG	1260 (377)
pro lys pro glu ser pro pro thr pro pro arg pro glu glu ala pro asp leu	
CGG GAG CGG TGG CGG GCC TTC CTC GAG GCC GGC CTC AGG CCC ACC CTA CGG GCC TTC GTG CGG	1320 (397)
arg glu arg trp arg ala phe leu glu ala leu arg pro thr leu arg ala phe val arg	
GAG GCC CGC CGG GAG GTC CGG GAA GGC CAG CTC TGC CTC GCT TTC CCC GAG GAC AAG GCC	1380 (417)
glu ala arg pro glu val arg arg glu gly gln leu cys leu ala phe pro glu asp lys ala	
TTC CAC TAC CGC AAG GCC TCG GAA CAG AAG GTG AGG CTC CTC CCC CTG GCC CAG GCC CAT	1440 (437)
phe his tyr arg lys ala ser glu gln lys val arg leu leu pro leu ala gln ala his	
TTC GGG GTG GAG GAG GTC GTC CTC GTC CTC GAG GGA GAA AAA AAA AGC	1500 (457)
phe gly val glu glu val val val leu leu leu lys lys lys ser leu ser pro arg	

frameshift site

FIG. 4B-1

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CCC CGC CCG GCC CCA CCT CCT GAA GCG CCC GCA CCC CCG GGC CCT CCC GAG GAG GAG GTA	1560
pro arg pro ala pro pro pro pro ala pro pro pro gly pro pro pro glu glu val	(477)
GAG GCG GAG GAA GCG GCG GAG GAG GCC CCG GAG GAG GAG GTC CGC CTC	1620
glu ala glu glu ala ala glu glu ala pro glu ala leu arg val arg leu	(497)
CTG GGG GGG CCG GTG CTC TGG GTG CCG CCG GGT ACT GGT ATA TAA	1680
leu gly gly arg val leu trp val arg arg pro arg thr arg glu ala pro glu glu	(517)
CCC CTG AGC CAA GAC GAG ATA GGG GGT ACT GGT ATA TAA	1740
pro leu ser gln asp glu ile gly gly thr gly ile *	(529)
CGACCTCGGA CAAGAGACCG TGGACAACAT CCTCAAGCGC	1820
GGTGCGGGGG CTCCAGAAGA TGGTGGCCGA GGGCCGCCCC	1880
GATGACCGCC ACCAAGAAG CCATGGAGGC GGCGGCCACC	1940
GAACGTCTGC GCCGCCGAGG TCTCCGAGGG CAAGGTGAAC	2000
CGCCACCATG CTGAAGAACT TCATCTA	2027

FIG. 4B-2

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FIG. 4C

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FIG. 4D

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FIG. 4E

REPLACEMENT SHEET

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Met his phe gly gly arg leu glu thr phe gln glu val val gln gly gly gln glu 20
 his val ser cys ala glu pro pro ser arg ala glu thr phe gln glu val val gln gly gly gln glu 40
 phe ser cys gln his pro arg glu his arg leu ala gln ala met ala tyr leu 60
 gly cys ala glu pro arg glu his arg leu ala gln ala val gln arg val 80
 arg glu asp pro ile leu pro pro arg leu pro arg val phe val phe val 100
 leu asp pro ile leu pro pro arg leu pro arg leu thr thr thr thr thr thr 120
 glu thr phe lys leu ala pro pro arg leu pro arg leu thr thr thr thr thr thr 140
 phe lys leu ala pro pro arg leu pro arg leu thr thr thr thr thr thr thr thr 160
 leu leu ala leu glu arg leu arg leu glu glu glu glu glu glu glu glu glu glu 180
 leu thr thr leu glu arg leu arg leu glu glu glu glu glu glu glu glu glu glu 200
 gly thr leu glu arg leu arg leu glu glu glu glu glu glu glu glu glu glu 220
 leu glu arg leu arg leu arg leu glu glu glu glu glu glu glu glu glu glu 240
 gly thr leu glu arg leu arg leu glu glu glu glu glu glu glu glu glu glu 260
 leu glu arg leu arg leu arg leu glu glu glu glu glu glu glu glu glu glu 280
 ala pro arg ala phe gln ala met glu glu glu glu glu glu glu glu glu glu 300
 ala arg ala phe gln ala met glu glu glu glu glu glu glu glu glu glu 320
 ala arg ala phe gln ala met glu glu glu glu glu glu glu glu glu glu 340
 glu ser pro phe pro phe pro phe pro phe pro phe pro phe pro phe pro 360
 trp arg ala phe pro phe pro phe pro phe pro phe pro phe pro phe pro 380
 pro arg val val val val val val val val val val val val val val val val 400
 arg lys ala ser val val val val val val val val val val val val val val 420
 glu glu val val val val val val val val val val val val val val val val 440
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FIG. 4F

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E. coli	MSYQVLARKWRPQTFADVVGQEHVLTALANGLSLGRHHAYLFSGTRGVGKTSIARLLAK	ATP site	60
H. inf.K.....II.....KDN.L.....F.....		60
B. sub.A.Y.VF...R.E.....ITKT.Q.A.LQKKFS.....P.T....A.KIF..		60
C. cres.	DA.T....Y.R..E.LI...AMVRT...AF.T...A..FMLT.V.....TT....R		113
M. gen.	-MH..FYQ.Y..IN.KQTL...SIRKI.V.AINRDKLPNG.I...E.T...TF.KII..		59
T. th.	--VSA.Y.RF..L..QE.....KEP.LKAIRE..LAQ.....P.....TT.....M		58
	Zn ⁺⁺ finger		
	* * *		
E. coli	GLNCET----		116
H. inf.VH-----V.....E.E..KA....N.I.....E.....K.V		116
B. sub.	AV...H-----APVDE..NE.AA.KG.TN.SIS.V.....NNG.DEI..IR.K.KF..S		116
C. cres.	A..Y..DTVK.PSVDLTTEGYH..S.IE..HM.VL.L.....DEM.E...G.R...V		173
M. gen.	AI..LN-----WDQIDV.NS..V.KS.NTNSAI.IV.....KNGIN.I.E.VE..FNH.F		115
T. th.	AVG.QG-----EDP.....PH.QAVQR.AHP.VVD.....NNS...V.E.RERIHL..L		112
E. coli	RGRFKVYLIDEVHMLSRHSFNALLKTLEEPPEHVKFLLATDPQKLPVTILSRCLQFHLK		176
H. inf.	V.....		176
B. sub.	AVTY...I.....IGA.....CI.I...E.H.I.L.I...QR.DF.		176
C. cres.	EA.Y...I.....TAA.....P.A..IF...EIR.V.....QR.D.R		233
M. gen.	TFKK...IL..A...TTQ.WGG.....S.PY.L.IFT..EFN.I.L.....QS.FF.		175
T. th.	SAPR..FIL..A....KSA.....P..L.VF...E.ERM.P.....TQH.RFR		172

FIG. 5A

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E.coli	ALDVEQIRHQLEHILNEEHIAHEPRALQQLLARAAGEGSLRDALS LTDQAIASGDGQ--VST	234
H.inf.	...ET..SQH.A...TQ.N.PF.DP..VK..K..Q..I..S.....M..R.--.TN	234
B.sub.	RITSQA.VGRMNK.VDA.QLQV.EGS.EII.S.H.GM.....L....SFGDI--LKV	234
C.cres.	RVEPDVLVKHFDR.SAK.GARI.MD..A.I.....V..G...L....VQTERGQT.TS	293
M.gen.	KITSDL.LER.ND.AKK.K.KI.KD..IKI.DLSQ.....G...L..LAI.LIVKKL.LL	235
T.th.	R.TE.E.AFK.RR..EAVGREA.EE..L....L.D.A....E..LERFLLLEGP---LTR	229
E.coli	QAVSAMLGTLDDDDQALSLVEAMVEANGERVMA LINEAAARGIEWEALLVEMGLLHRIAM	294
H.inf.	NV..N...L...NYSVDILY.LHQG...LL.RTLQRV.DAAGD.DK..G.CAEK...Q..L	294
B.sub.	EDALLIT.AVSQLYIGK.AKSLHDK.VSDALETL..LLQQ.KDPAK.IED.IFYFRDMLL	294
C.cres.	TV.RD...LA.RS.TIA.Y.HVMAGTKDALEGFRALWGF.ADPVVMLDV.DHC.AS.V	353
M.gen.	MLKKHLISLIEMQNL.L.KQFYQ.I	260
T.th.	KE.ERA..SPPGTGVAEIAASLARGKTAEALG.ARRLYGE.YAPRS.VSGL.EVFREGLY	289

FIG. 5B

REPLACEMENT SHEET

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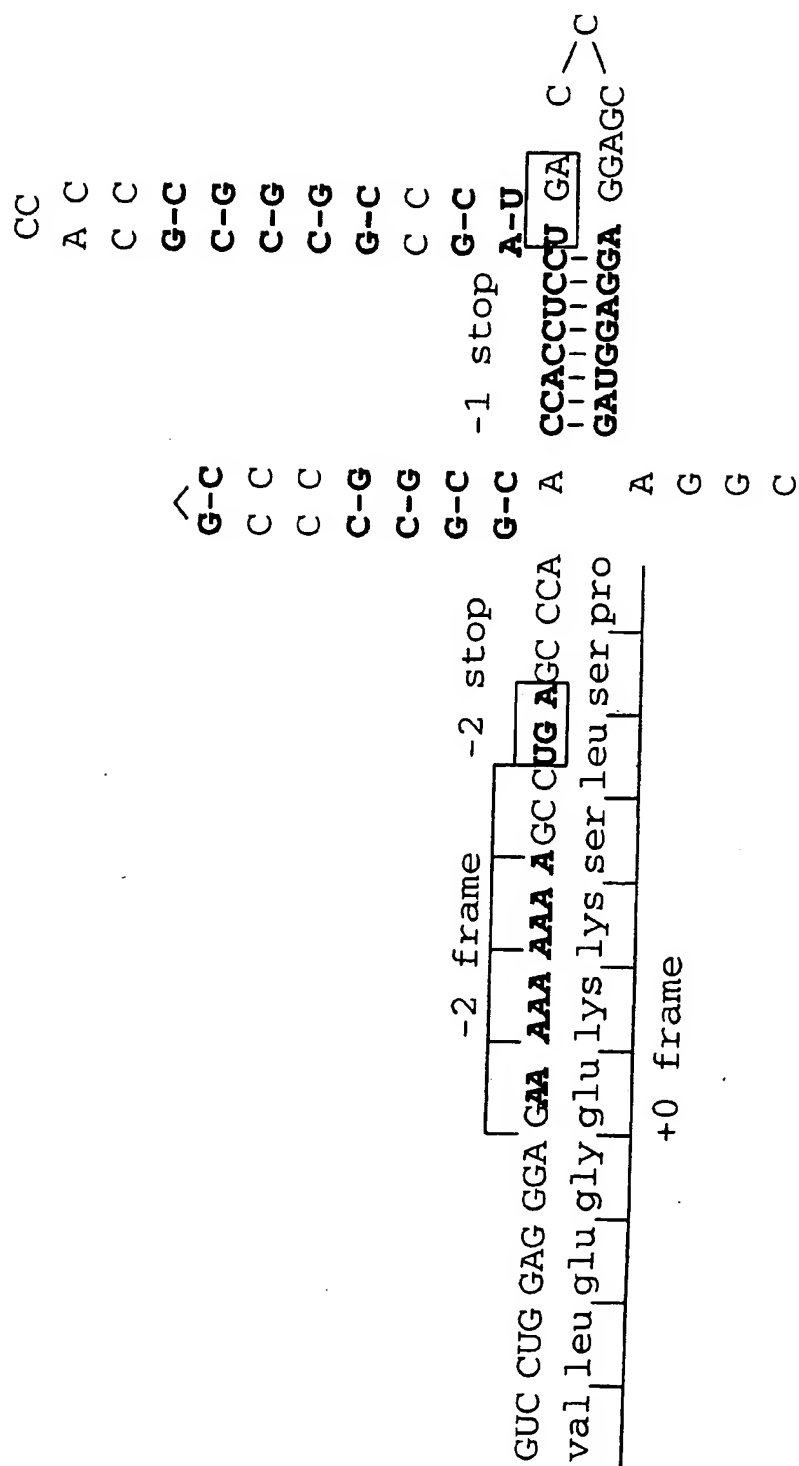


FIG. 6

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FIG. 7

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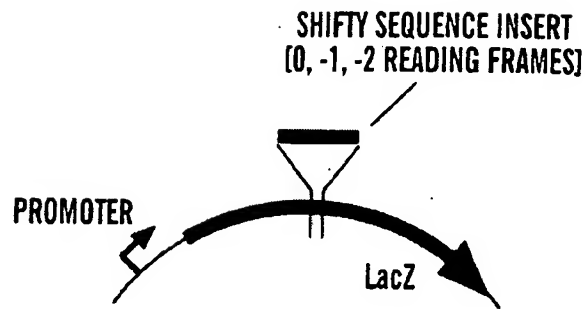


FIG. 8A

	READING FRAME	BLUE	WHITE
SHIFTY SEQUENCE	0	+	
	-1	+	
	-2	+	
MUTANT SEQUENCE	0	++	
	-1		+
	-2		+

FIG. 8B

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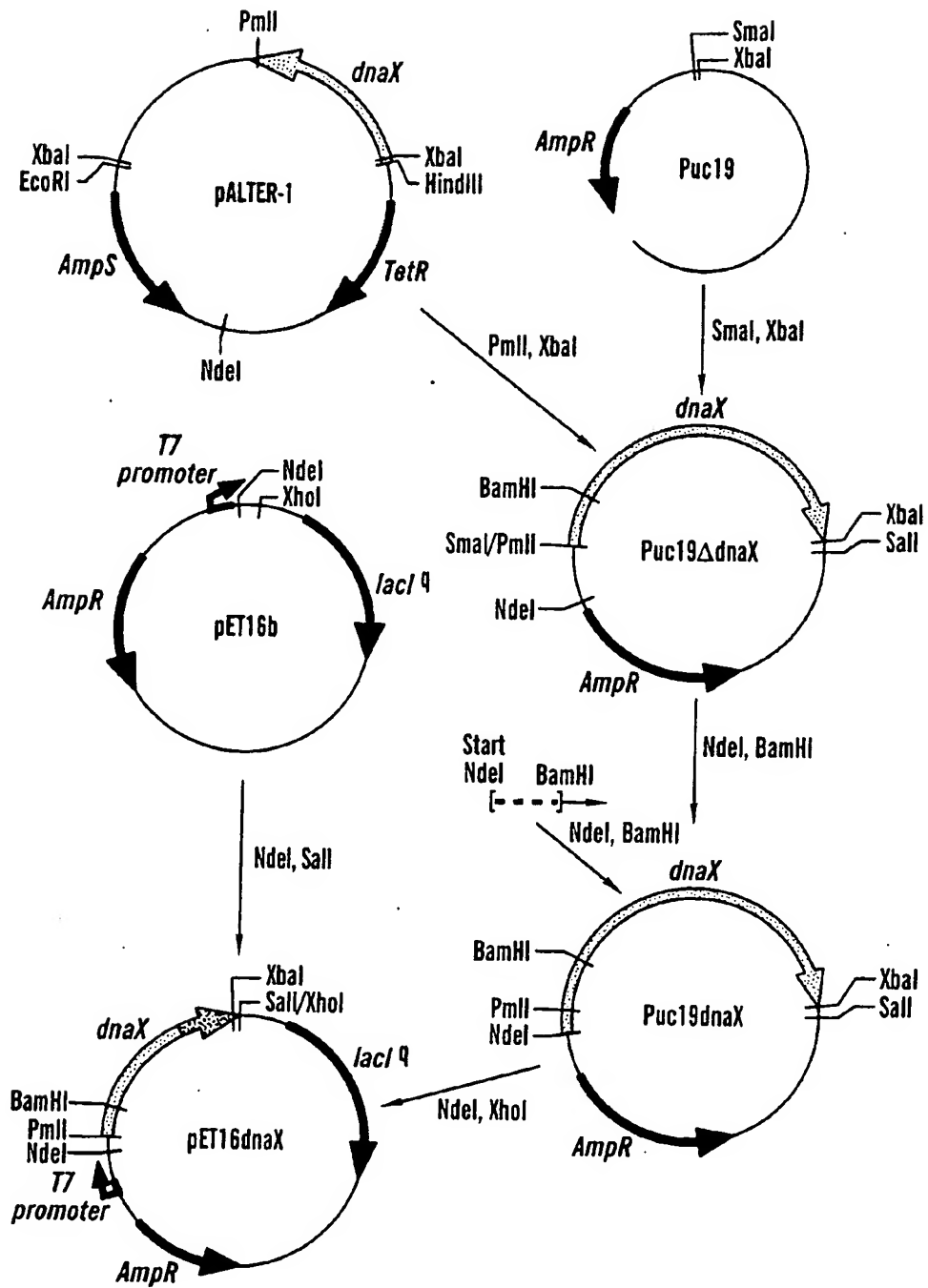


FIG. 9

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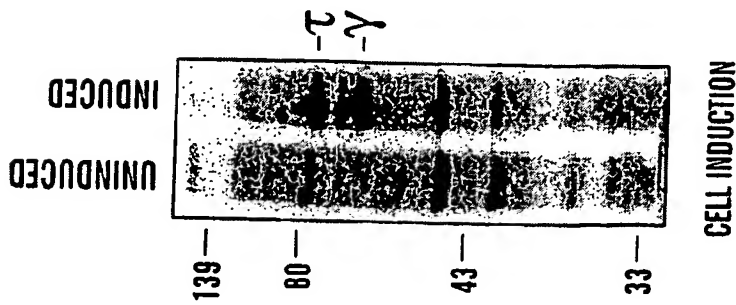


FIG. 10A

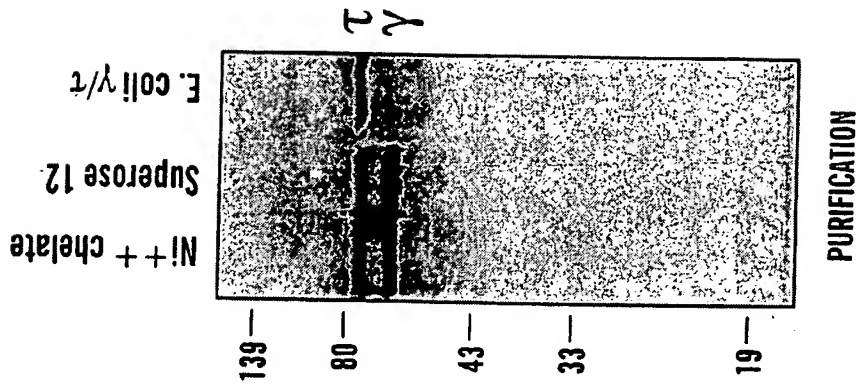


FIG. 10B

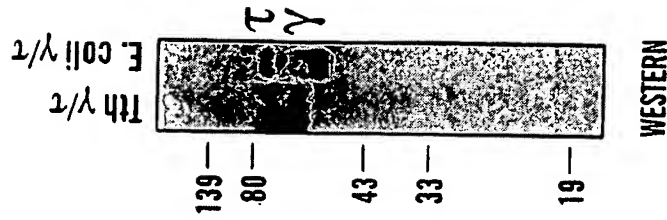


FIG. 10C

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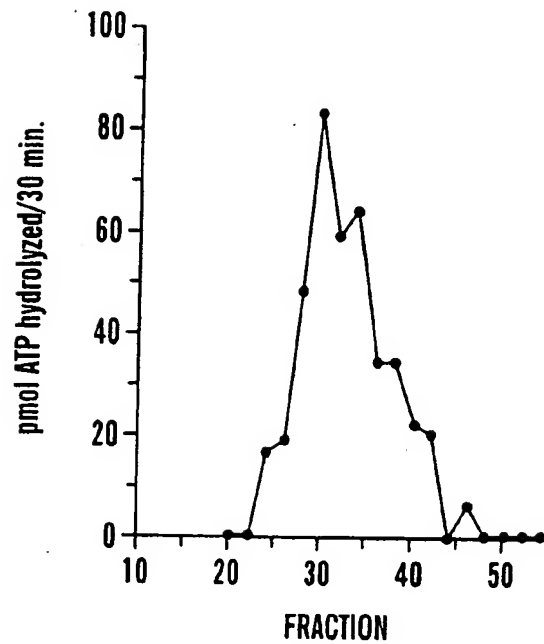


FIG. 11A

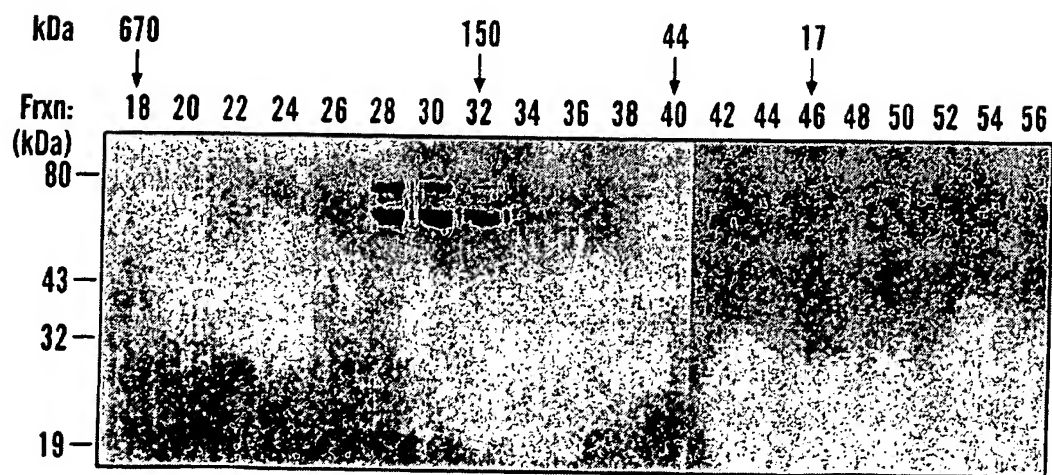


FIG. 11B

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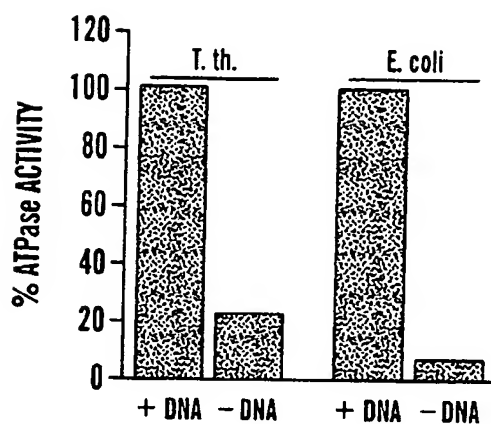


FIG. 12A

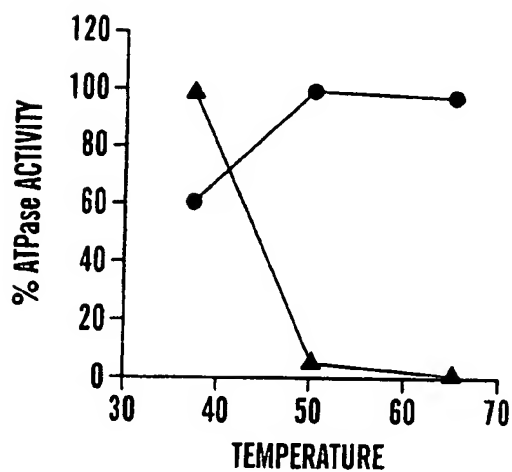


FIG. 12B

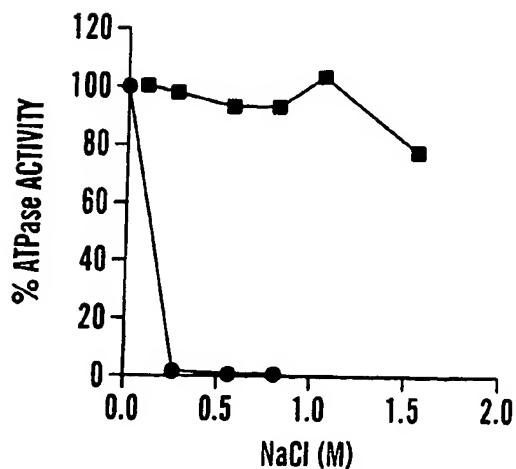


FIG. 12C

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FIG. 13A

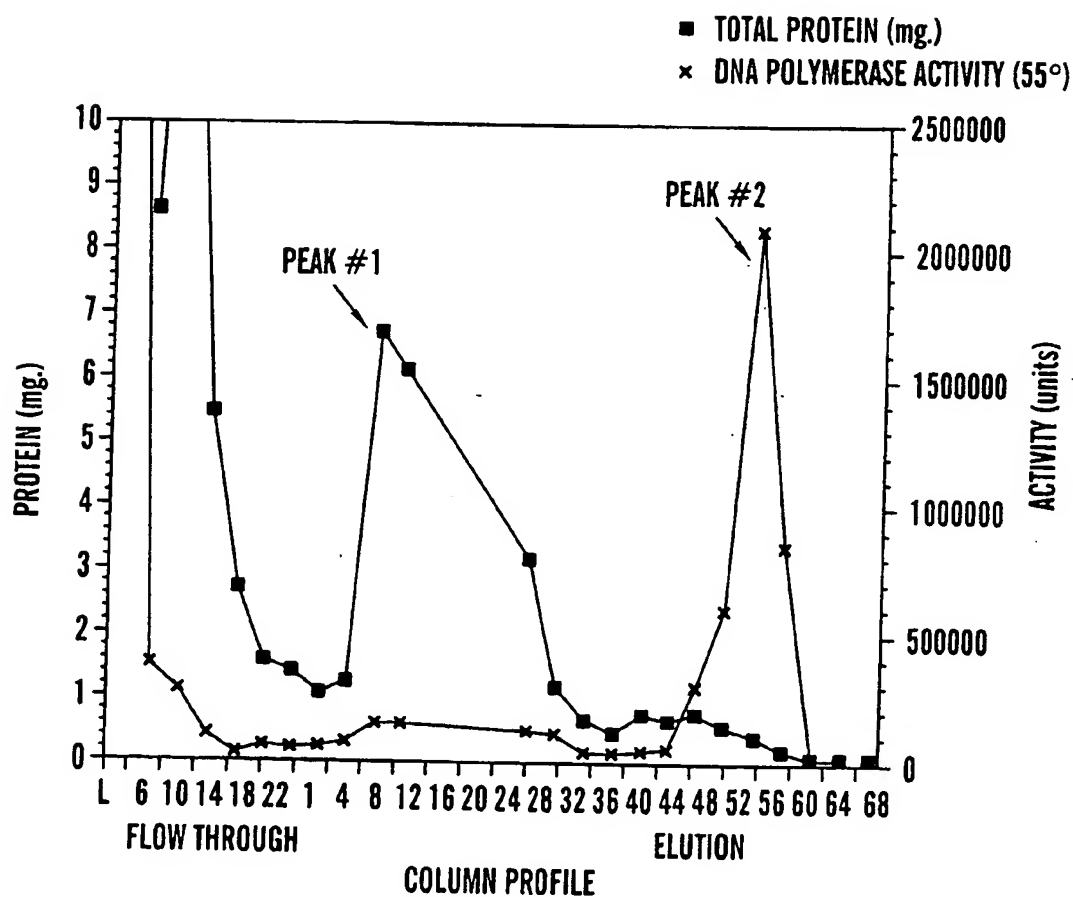


FIG. 13B

ATP AGAROSE STEP COLUMN

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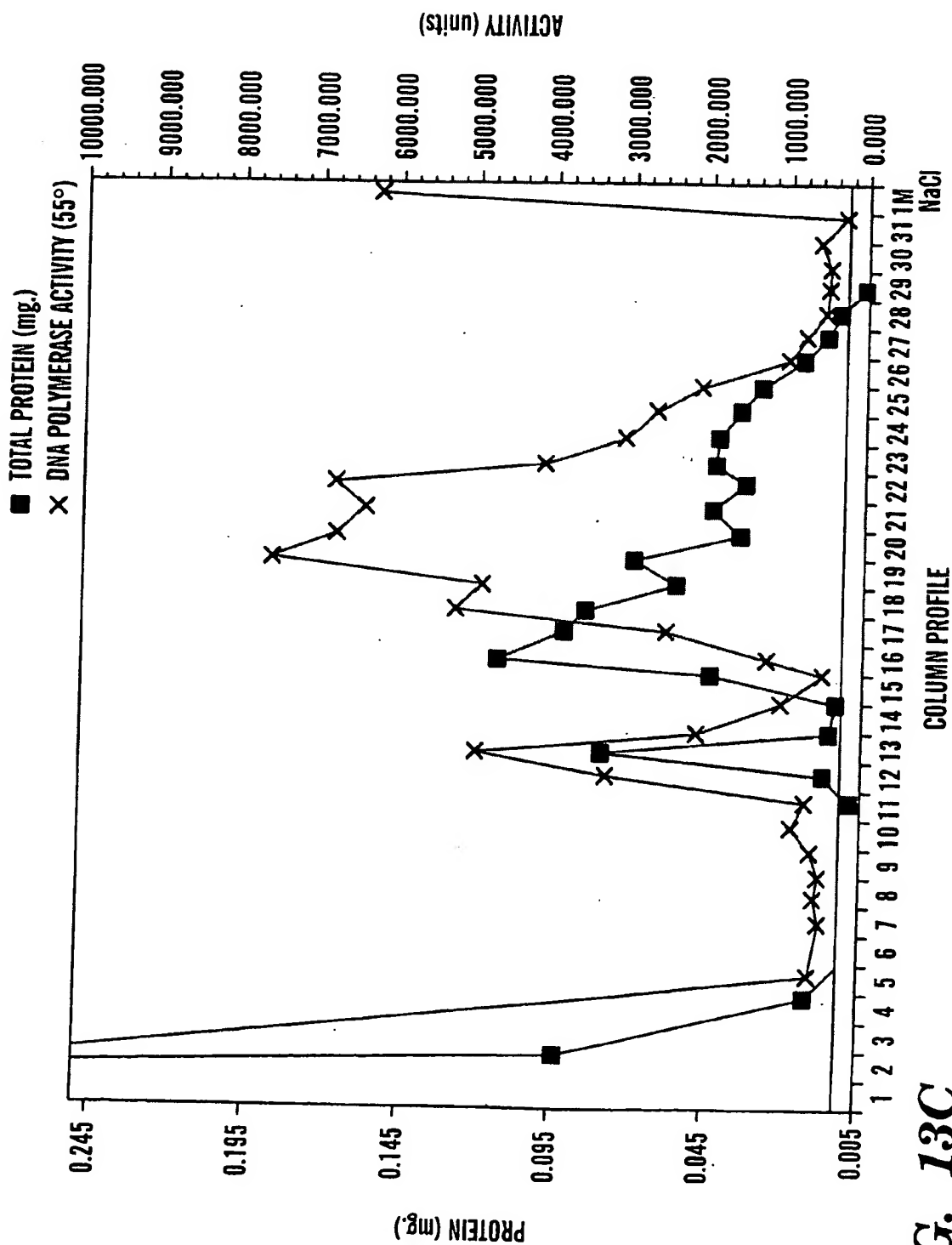


FIG. 13C

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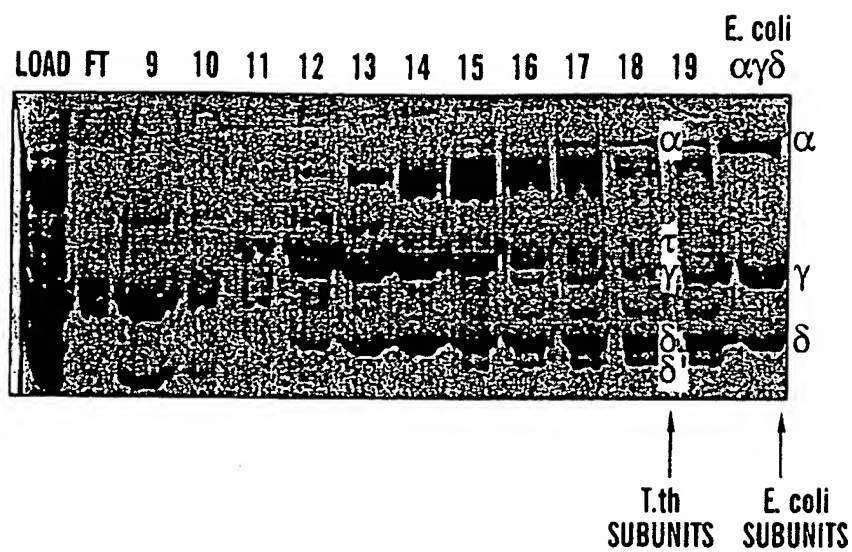


FIG. 14A

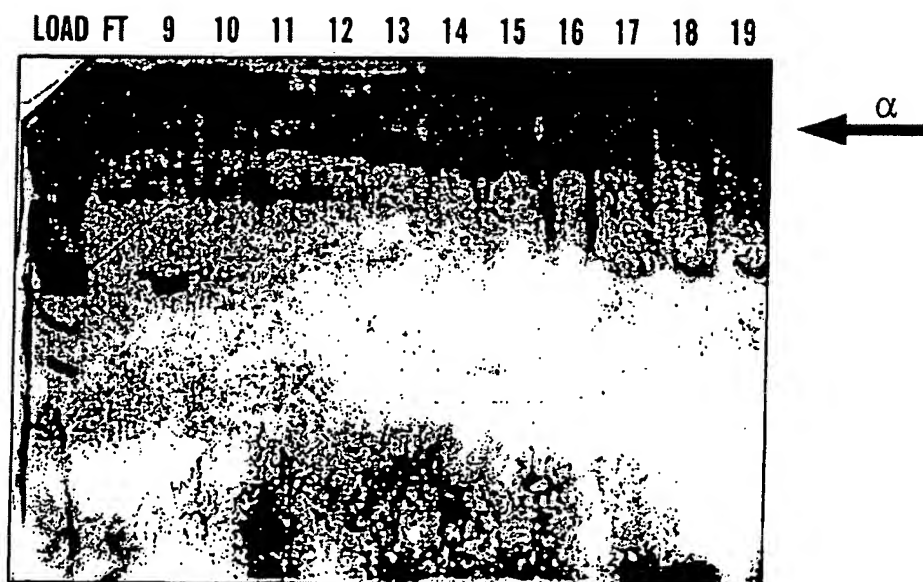


FIG. 14B

REPLACEMENT SHEET

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Alignment of TTH1 with alphas subunits of other organisms.

E.coli	DRYFLELIRTGRPDEESYLHAAVELAEARGLPVV	197	(ID#72)
V.chol.	DHFYLELIRTGRADEESYLHFALDVAEQYDLPVV	197	(ID#73)
H.inf.	DHFYLA LSRTGRPNEERYIQAAKLAE RCDLPLV	197	(ID#74)
R.prow.	DRFYFEIMRHDLP EEQFIENSYIQIASELSIPIV	195	(ID#75)
H.pyl.	DDFYLEIMRHGILDQRFIDEQVIKMSLETGLKII	213	(ID#76)
S.sp.	DDYYLEIQDHGSVEDRLVNINLVKIAQELDIKIV	202	(ID#77)
M.tub.	DNYFLELMDHGLTIERRVRDGLLEIGRALNIPPL	220	(ID#78)
T.th.	FFIEIQNHGLSEQK		(ID#61)

FIG. 15A

Alignment of TTH2 with alphas subunits of other organisms.

E.coli	NKRRAKNGEPPLDIAAIP LDDKKSF DMLQRSETTAVFQLES RGMKD	618	(ID#79)
V.chol.	NPRLKKAGKPPVRIEAIPLDDARSFRNLQDAKTTAVFQLES RGMKE	618	(ID#80)
H.inf.	NVRMVREGKPRVDIAAIP LDDPESFELLKRSETTAVFQLES RGMKD	618	(ID#81)
R.prow.	CKLLKEQGIKIDFDDMTFDDKKTYQMLCKGKGVGFQFESIGMKD	624	(ID#82)
H.pyl.	LKIIKTQHKISVDFLSLDMDDPKVYKTIQSGDTVGFQIES -GMFQ	648	(ID#83)
S.sp.	QERKALQIRARTGSKKLPDDVKKTHKLL EAGDLEGIFQLESQGMKQ	643	(ID#84)
M.tub.	IDNVRANRGIDLDESVP LDDKATYELLGRGDTLGVFQLDGGPMRD	646	(ID#85)
T.th.	RVELDYDALTLDD		(ID#60)

FIG. 15B

REPLACEMENT SHEET

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ATGGGCCGGGAGCTCCGCTTCGCCCACCTCCACCAGCACA	
CCCAGTTCTCCCTCCTGGACGGGGCGGCGAAGCTTTCCGA	
CCTCCTCAAGTGGGTCAAGGAGACGACCCCCGAGGACCCC	120
GCCTTGGCCATGACCGACCACGGCAACCTCTTCGGGGCCG	
TGGAGTTCTACAAGAAGGCCACCGAAATGGGCATCAAGCC	
CATCCTGGGCTACGAGGCCTACGTGGCGGCGGAAAGCCGC	240
TTTGACCGCAAGCGGGGAAAGGGCCTAGACGGGGGCTACT	
TTCACCTCACCTCCTCGCCAAGGACTTCACGGGGTACCA	
GAACCTGGTGCGCCTGGCGAGCCGGGCTTACCTGGAGGGG	360
TTTTACGAAAAGCCCCGGATTGACCGGGAGATCCTGCGCG	
AGCACGCCGAGGGCCTCATCGCCCTCTCGGGGTGCCTCGG	
GGCGGAGATCCCCCAGTTCATCCTCCAGGACCGTCTGGAC	480
CTGGCCGAGGCCCCGGCTCAACGAGTACCTCTCCATCTTCA	
AGGACCGCTTCTTCATCGAGATCCAGAACCACGGCCTCCC	
CGAGCAGAAAAAGGTCAACGAGGTCTCAAGGAGTTCGCC	600
CGAAAGTACGGCCTGGGGATGGTGGCCACCAACGACGGCC	
ATTACGTGAGGAAGGAGGACGCCCCGCGCCACGAGGTCTT	
CCTCGCCATCCAGTCCAAGAGCACCTGGACGACCCCGGG	720
CGCTGGCGCTTCCCCTGCGACGAGTTCTACGTGAAGACC	
CCGAGGAGATGCGGGCCATGTTCCCCGAGGAGGAGTGGGG	
GGACGAGCCCTTTGACAACACCGTGGAGATCGCCCGCATG	840
TGCAACGTGGAGCTGCCCATCGGGGACAAGATGGTCTACC	
GAATCCCCCGCTTCCCCCTCCCCGAGGGGCGGACCGAGGC	
CCAGTACCTCATGGAGCTCACCTTCAAGGGGCTCCTCCGC	960
CGCTACCCGGACCGGATCACCGAGGGCTTCTACCGGGAGG	
TCTTCCGCCTTTTGGGGAAGCTTCCCCCCCCACGGGGACGG	
GGAGGCCTTGGCCGAGGCCTTGGCCCAGGTGGAGCGGGAG	1080
GCTTGGGAGAGGCTCATGAAGAGCCTCCCCCTTTGGCCG	
GGGTCAAGGAGTGGACGGCGGAGGCCATTTTCCACCGGGC	
CCTTTACGAGCTTTCGGTGATAGAGCGCATGGGGTTTCCC	1200
GGCTACTTCCTCATCGTCCAGGACTACATCAACTGGGCCC	
GGAGAAACGGCGTCTCCGTGGGGCCCCGGCAGGGGGAGCGC	
CGCCGGGAGCCTGGTGGCCTACGCCGTGGGGATCACCAAC	1320
ATTGACCCCTCCGCTTCGGCCTCCTCTTTGAGCGCTTCC	
TGAACCCGGAGAGGGTCTCCATGCCCGACATTGACACGGA	
CTTCTCCGACCGGGAGCGGGACCGGGTGATCCAGTACGTG	1440
CGGGAGCGCTACGGCGAGGACAAGGTGGCCCAGATCGGCA	
CCCTGGGAAGCCTCGCCTCCAAGGCCGCCCTCAAGGACGT	
GGCCCCGGGTCTACGGCATCCCCACAAGAAGGCGGAGGAA	1560
TTGGCCAAGCTCATCCCGGTGCAGTTCGGGAAGCCCAAGC	
CCCTGCAGGAGGCCATCCAGGTGGTGCCGGAGCTTAGGGC	
GGAGATGGAGAAGGACCCCAAGGTGCGGGAGGTCTTCGAG	1680
GTGGCCATGCGCCTGGAGGGCCTGAACCGCCACGCCTCCG	
TCCACGCCCGCCGGGGTGGTGATCGCCGCCGAGCCCCCTCAC	
GGACCTCGTCCCCCTCATGCGCGACCAGGAAGGGCGGCCC	1800
GTCACCCAGTACGACATGGGGGCGGTGGAGGCCTTGGGGC	
TTTTGAAGATGGACTTTTTGGGCCTCCGCACCCTCACCTT	

FIG. 16A

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CCTGGACGAGGTCAAGCGCATCGTCAAGGCGTCCCAGGGG	1920
GTGGAGCTGGACTACGATGCCCTCCCCCTGGACGACCCCA	
AGACCTTCGCCCTCCTCTCCCGGGGGGAGACCAAGGGGGT	
CTTCCAGCTGGAGTCGGGGGGGATGACCGCCACGCTCCGC	2040
GGCCTCAAGCCGCGGCGCTTTGAGGACCTGATCGCCATCC	
TCTCCCTCTACCGCCCCGGGCCCATGGAGCACATCCCCAC	
CTACATCCGCCGCCACCACGGGCTGGAGCCCGTGAGCTAC	2160
AGCGAGTTTCCCCACGCCGAGAAGTACCTAAAGCCCATCC	
TGGACGAGACCTACGGCATCCCCGTCTACCAGGAGCAGAT	
CATGCAGATCGCCTCGGCCGTGGCGGGGTACTCCCTGGGC	2280
GAGGCGGACCTCCTGCGGCGGTCCATGGGCAAGAAGAAGG	
TGGAGGAGATGAAGTCCCACCGGAGCGCTTCGTCCAGGG	
GGCCAAGGAAAGGGGCGTGCCCGAGGAGGAGGCCAACCGC	2400
CTCTTTGACATGCTGGAGGCCTTCGCCAACTACGGCTTCA	
ACAAATCCCACGCTGCCGCCTACAGCCTCCTCTCCTACCA	
GACCGCCTACGTGAAGGCCCACTACCCCGTGGAGTTCATG	2520
GCCGCCCTCCTCTCCGTGGAGCGGCACGACTCCGACAAGG	
TGGCCGAGTACATCCGCGACGCCCGGGCCATGGGCATAGA	
GGTCCTTCCCCCGGACGTCAACCGCTCCGGGTTTGAATTC	2640
CTGGTCCAGGGCCGGCAGATCCTTTTCGGCCTCTCCGCGG	
TGAAGAACGTGGGCGAGGCGGCGGCGGAGGCCATTCTCCG	
GGAGCGGGAGCGGGGCGGCCCTACCGGAGCCTCGGCGAC	2760
TTCTCAAGCGGCTGGACGAGAAGGTGCTCAACAAGCGGA	
CCCTGGAGTCCCTCATCAAGGCGGGCGCCCTGGACGGCTT	
CGGGGAAAGGGCGCGGCTCCTCGCCTCCCTGGAAGGGCTC	2880
CTCAAGTGGGCGGCCGAGAACC GGGAGAAGGCCCGCTCGG	
GCATGATGGGCCTCTTCAGCGAAGTGGAGGAGCCGCCTTT	
GGCCGAGGCCGCCCCCTGGACGAGATCACCCGGCTCCGC	3000
TACGAGAAGGAGGCCCTGGGGATCTACGTCTCCGGCCACC	
CCATCTTGCGGTACCCCGGGCTCCGGGAGACGGCCACCTG	
CACCTTGGAGGAGCTTCCCCACCTGGCCCGGGACCTGCCG	3120
CCCCGGTCTAGGGTCTCCTTGCCGGGATGGTGGAGGAGG	
TGGTGCGCAAGGCCACAAAGAGCGGCGGGATGATGGCCCG	
CTTCGTCTCTCCGACGAGACGGGGGCGCTTGAGGCGGTG	3240
GCATTCGGCCGGGCCTACGACCAGGTCTCCCGAGGCTCA	
AGGAGGACACCCCCGTGCTCGTCTCGCCGAGGTGGAGCG	
GGAGGAGGGGGGCGTGCGGGTGTGGCCAGGCCGTTTGG	3360
ACCTACGAGGAGCTGGAGCAGGTCCCCCGGGCCCTCGAGG	
TGGAGGTGGAGGCCTCCCTCCTGGACGACCGGGGGGTGGC	
CCACCTGAAAAGCCTCCTGGACGAGCACGCGGGGACCCTC	3480
CCCCTGTACGTCCGGGTCCAGGGCGCCTTCGGCGAGGCC	
TCCTCGCCCTGAGGGAGGTGCGGGTGGGGGAGGAGGCTGT	
AGGCGGCCGCGTGGTTCCGGGCCTACCTCCTGCCCGACCG	3600
GGAGGTCTTCTCCAGGGCGGCCAGGCGGGGGAGGCCAG	
GAGGCGGTGCCCTTCTAGGGGGTGGGCCGTGAGACCTAGC	
GCCATCGTTCTCGCCGGGGGCAAGGAGGCCTGGGCCCGAC	3720
CCCTTTTGG	

FIG. 16B

REPLACEMENT SHEET

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MGRELRF AHLHQHTQFSLLDGAPKLSDLLKWVEETTPEDP	
ALAMTDHGNLFGAVEFYKKATEMGIKPILGYEAYVAAESR	
FDRKRKGKLDGGYFHLTLLAKDFTGYQNLVRLASRAYLEG	120
FYEKPRIDREILREHAEGLIALSGCLGAEIPQFILQDRLD	
LAEARLNEYLSIFKDRFFIEIQNHGLPEQKKVNEVLKEFA	
RKYGLGMVATNDGHYVRKEDARAHEVLLAIQSKSTLDDPG	240
ALALPCEEFYVKTPEEMRAMFPEEEVGGRSPLTTPWRSPPH	
VORGAAIGTRWSTRI PRFPLPEGRTEAQYLMELTFKGLLR	
RYPDRITEGFYREVFRLSGKLPPHGDGEALAEALAQVERE	360
AWERLMKSLPPLAGVKEWTAEAFHRLALYELSAIERMGRP	
GLLPHRPGHLHQLGPEKGVSVGPGRGGAAGSLVAYAVGITN	
IDPLRFGLL FERFLNPERVSMPTDIDTDFSDRERDRVIQYV	480
RERYGEDKVAQIGTLGSLASKAALKEVARVYGI PRKKAEE	
LAKLIPVQFGKPKPLQEA IQVPELRAEMEKDPKVREVLE	
VAMRLEGLNRHASVHAGRGGVFSEPLTDLVPLCATRKGGP	600
YTQYDMGAVEALGLLKMDFLGLRRTLFLDEVKRIVKASQG	
VELDYDALPLDDPKTFALLSRGETKGVFQLESGGMTATLR	
GLKPRRFEDLIAILSLYRPGPMEHIPTYIRRHHGLEPVSY	720
SEFPHAKEYLKPILDETYGIPVYQEQIMQIASAVAGYSLG	
EADLLRRSMGKKKVEEMKSHRERFVQGAKEGVP EEEANR	
LFDMLEAFANYGFNKSHAAAYSLLSYQTAYVKAHYPVEFM	840
AALLSVERHDSKVAEYIRDARAMGIEVLPPDVNRSGFDF	
LVQGRQILFGLSAVKNVGEAAAEAILRERERGGPYRSLGD	
FLKRLDEKVLNKRRTLES LIKAGALDGFGERARLLASLEGL	960
LKWAAENREKARSGMMGLFSEVEEPPLAEAAPLDEITRLR	
YEKEALGIYVSGHPILRYPGLRETATCTLEELPHLARDLP	
PRSRVLLAGMVEEVVRKPTKSGGMMARFVLSDETGALEAV	1080
AFGRAYDQVSPRLKEDTPVLVLAEVEREEGGVRVLAQAVW	
TYQELEQVPRALEVEVEASLPDDRGV AHLKSLLDEHAGTL	
PLYVRVQGAFG EALLALREVRVGEEALGALEAAGFPAYLL	1200
PNREVS PRLTGSGGPRGRALSTGLALKTYP IALPGGNEAL	
ARPLL	

FIG. 16C

REPLACEMENT SHEET

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	Start1	3'-Exo I	
T.th.	VERVVRTLLDGRFLLEEGVGLWEWRYPPFLEGEAVVLDLETTGLAG-----LDEVIEVGLRLLEGG---RRLPF		
D.rad.		PWPQDVVVFDDLETTGFSPA-----SAAIVEIGAVRIVGGQIDETLKF	
Bac.sub.	HGIKMIYGMEANLVDDGVPIAYNAAHRLLEEETVVFDDVETGLSAV-----YDTIIELAAVKVKGGE--IIDKF		
H.inf.		MINPNRQIVLDTETTGMNQGLGAHYEGHCHIEIGAVELINRR-YTGNNX	
E.c.		MSTAITRQIVLDTETTGMNQIGAHSEGHKIIIEIGAVEVVNRR-LTGNNF	
H.pyl.	NLEYLKACGLNFIETSENLIITLKNLKTPLKDEVFSFIDLETTGSCPI-----KHEILEIGAVQVKGGE--IINRF		
			3'-Exo II
T.th.	QSLVR-PLPP---AEARSWNLT---GIPREALEEAPSLEEVLEKAYPLRGDATLVIHNAAFDLGFL-RPALEGLG		
D.rad.	ETLVR-PTRPDGSMLSIPWQAQRVHGISDEMVRRAPAXKDVLPDFDFVDGSAVVHNVSFDDGGFM-RAGAERLG		
Bac.sub.	EAFAN-PHRP---LSATIIELT---GITDDMLQDAPVDVIRDFREWIIGDDILVAHNASFDDMGFL-NVAYKKLL		
H.inf.	HIYIK-PDRP---XDPDAIKVH---GITDEMLADKPEFKEVAQDFLDYINGAELLIHNAFDDVGFM-DYEFKRKL		
E.c.	HVYIK-DRLV---DPEAFGVH---GIAVDFLLDKPTFAEVAVEFMDYIRGAELVIHNAAFDVGFM-DYEFSLK		
H.pyl.	ETLVKVSVP-----DYIAELT---GITYEDTLNAPSHEALQELRLFLGNSVFAHNAFDDYVNFJLGRYFVEKLH		
			3'-Exo IIIC
T.th.	-----YRLENPVVDSLRLARRGLPGLRRYGLDALSEVLELPRRT---CHRALEDVERTLAVVHEVYMLT-----SG		
D.rad.	-----LSWAPERELCTMQLSRRAPPRERTHNLTVLAERLGLLEFAPGGRHRSYGDVQVTAQAYLRLLLELG-----ER		
Bac.sub.	E---VEKAKNPVIDTLELGRFLYPEFKNHRLNTLCKKFDIELTQ---HBRAIYDTEATAYLLKMLKDA-----EK		
H.inf.	-LNVKTDDICLVTDTLQMARQMPGKRN-NLDALCDDLGLIDNSKRTLHGALLDAEILADVYLMMTGGQTNLFDEEE		
E.c.	RDIAKTNTFCVKVTDLSLAVARKMFPKGKN-SLDALCARYEIDNSKRTLHGALLDAQIILAENVYLAAMTGGQTSMAFAME		
H.pyl.	-----CPLLNLKCLTDLKRAILSMRY-SLSFLKELGLFGIEV---SHRAYADALASYKLFICLLNLP--SYIKT		

FIG. 17

REPLACEMENT
SHEET

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ATGGTGGAGCGGGTGGTGCGGACCCTTCTGGACGGGAGGT 40
TCCTCCTGGAGGAGGGGGTGGGGCTTTGGGAGTGGCGCTA
CCCCTTTCCCCTGGAGGGGGAGGCGGTGGTGGTCCTGGAC 120
CTGGAGACCACGGGGCTTGCCGGCCTGGACGAGGTGATTG
AGGTGGGCCTCCTCCGCCTGGAGGGGGGAGGCGCCTCCC 200
CTTCCAGAGCCTCGTCCGGCCCCCTCCCGCCCGCCGAAGCC
CGTTCGTGGAACCTCACCGGCATCCCCCGGGAGGCCCTGG 280
AGGAGGCCCCCTCCCTGGAGGAGGTTCTGGAGAAGGCCTA
CCCCCTCCGCGGCGACGCCACCTTGGTGATCCACAACGCC 360
GCCTTTGACCTGGGCTTCCTCCGCCCCGGCCTTGGAGGGCC
TGGGCTACCGCCTGGAAAACCCCGTGGTGGACTCCCTGCG 440
CTTGGCCAGACGGGGCTTACCAGGCCTTAGGCGCTACGGC
CTGGACGCCCTCTCCGAGGTCCTGGAGCTTCCCCGAAGGA 520
CCTGCCACCGGGCCCTCGAGGACGTGGAGCGCACCCCTCGC
CGTGGTGCACGAGGTATACTATATGCTTACGTCCGGCCGT 600
CCCCGCACGCTTTGGGAACTCGGGAGGTAG

FIG. 18A

MVERVVRTLLEDGRFLLEEGVGLWEWRYPFPLEGEAVVLD 40
LETTGLAGLDEVIEVGLLRLEGGRRLPFQSLVRPLPPAEA
RSWNLTGIPREALEEAPSLEEVLEKAYPLRGDATALVIHNA 120
AFDLGFLRPALEGLGYRLENPVVDSLRLARRGLPGLRRYG
LDALSEVLELPRRTCHRALEDVERTLAVVHEVYYMLTSGR 200
PRTLWELGRZ

FIG. 18B

REPLACEMENT
SHEET

Alignment of dnaA genes.

P. mar.	MLEASWEK	VQSSL--KQNLK--	-----PSYE	TWIRPTEFSG--PKN	GELTLIAPNSFSSAW	LKNYSQTIQETAE-	65
Syn. sp.	MVSCENLWQQ	ALAIL--ATQLTK--	-----PAFD	TWIKASVLIS--LGD	GVATTIQVENGFLVNH	LQKSYGPLLMEVLT-	67
B. sut.	MENILDWNQ	ALAQI--EKKLSK--	-----PSFE	TWMKSTKAHS--LQG	DTLTITAPNEFARDW	LESRYLHLIADTIY-	67
M. tub.	MTDDPGSGFTTVWNA	VVSELNGDPKVDGDP	SSDANLSAPLTPQQR	AWNLVQPLT--IVE	GFALLSVPSFVQNE	IERHLRAPITDALS-	87
T. th.	MSHEAVWQH	VLEHI--RRSITE--	-----VEFH	TWFERIRPLG--IRD	GVLELAVPTSFALDW	IRRHVAGLIQEGPR-	66
E. coli	MSLSLWQQ	CLARL--QDELPA--	-----TEFS	MWIRPLQAE--LSD	NTLALYAPNRFVLDW	VRDKYLNININGLLT-	64
T. mar.	MKER	ILQEI--KTRVNR--	-----KSWE	LWPFSSFDVKS--IEG	NKVVSFVGNLFIKEW	LEKKYYSVLSKAVK-	61
H. pyl.	MDTNNNIEKE	ILALVKQNPKVSL--	-----IEYE	NYPSQLKYNPNASKS	DIAFFYAPNQVLCCT	ITAKYGALLKEILSQ	72
P. mar.	EIFG---EPVTVHVK	VKANAESSDEHYSSA	P-----	---ITPPLEASPGSV	DSSGSSSLRLSK---	-KTLPLLNLRVFNH	130
Syn. sp.	DLTG---QEITVKLI	TDGLEPHS---LIGQ	E-----	---SSLPMETTP---	-----	-KNATALNGKYTFSR	115
B. sut.	ELTG---EELSIFV	IPQNDVEDFMKPKQ	VKKAVKEDTSDFPQN	-----	-----	-----MLNPKYTFDT	119
M. tub.	RRLGH-QIQGVRIA	PPATDEADDTTVPPS	ENPATTSPDTTNDND	EIDDSAAAARGDNQHS	WPSYFTTERPHNTDSA	TAGVTSLNRRYTFDT	176
T. th.	LLGAQ-APRFLRVV	PGVVQEDIFQPPPS	PPAQAP-	-----	-----	-----EDTFKT	108
E. coli	SFCGADAPQLRFEVG	TKPVTQTPQAATSN	VAAPQAQVATQPPQRA	APSTRSGWNVVAPAPA	EP-----	-TYRSNVNVKHTFDN	140
T. mar.	VVLG---NDATFEIT	YEAFEPHSSYSEPLV	KKRAVLITP-----	-----	-----	-----LNPDYTFEN	106
H. pyl.	NKVG-MHLAHSVDVR	IEVAPKIQINAQSN	NYKAIKTS-----	-----	-----	-----VKDSYTFEN	118
P. mar.	FVVGPNRMAHAAAM	AVAESPGREFNPLFI	CGGVGLGKTHLMQAI	GHYRLEIDPGAKVSY	VSTETFTNDLIL--A	IRQDRMQAFRDRYR-	217
Syn. sp.	FVVGPTNRMAHAASL	AVAESPGREFNPLFL	CGGVGLGKTHLMQAI	AHYRLEMVFNKVVY	VSTERFTNDLIT--A	IRQDNMEDFRSYR-	202
B. sut.	FVIGSGNRFHAHAASL	AVAEAPAKAYNPLFI	YGGVGLGKTHLMHAI	GHYVIDHNPSAKVVY	LSSEKFTNEFIN--S	IRDNKAVDNRYR-	206
M. tub.	FVIGASNRFAHAAAL	AIAEAPARAYNPLFI	WGESGLGKTHLLHAA	GNVYQRLFPGRVVKY	VSTEEFTNDFIN--S	LRDDRKVAFRSYR-	263
T. th.	SWWGPITPWPHGAV	AVAESPGRAYNPLFI	YGGRLGKTYLMLHAV	GPLRAKRFPHMRLEY	VSTETFTNELINRPS	AR-DRMTEFRERYR-	196
E. coli	FVEGKSNQLARAAAR	QVADNPGGAYNPLFL	YGGTGLGKTHLLHAV	GNNGIMARKPNKVVY	MHSERFVQDMVK--A	LQNNAIIEEFKRYR-	227
T. mar.	FVVGPGNSFAYHAAL	EVAKHPGR--YNPLFI	YGGVGLGKTHLLQSI	GNVYVQNEPDLRVMY	ITSEKFLNDLVD--S	MKEGKLNFEFREKYRK	193
H. pyl.	FVVGSCNNTVVEIAK	KVAQSDTPPYNPVLF	YGGTGLGKTHILNAI	GNHALEK--HKKVVL	VTSEDFLTDFLK--H	LDNKTMDSFKAKYR-	203

FIG. 19A

REPLACEMENT SHEET

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P. mar.	AADLILVDDIQFIEG	KEYTQEEFFHTFNAL	HDAGSQIVLASDRPP	SQIPRLQERLMSRFS	MGLIADVQAPDLETR	MAILQKKAHERVGL	307
Syn. sp.	SADFLILDDIQFIK	KEYTQEEFFHTFNAL	HEAGQVWVASDRAP	QRIPLQDRLISRFS	MGLIADIQVDPLETR	MAILQKKAEDRIRL	292
B. sub.	NVDVLLDDIQFIK	KEQTQEEFFHTFNAL	HEESQIVISSDRPP	KEIPTLEDRLRSRFE	WGLITDITPPDLETR	TAILRKKAKAEGLDI	296
M. tub.	DVDVLLDDIQFIK	KEGIQEEFFHTFNAL	HNANKQIVISSDRPP	KQATLEDRLRTRFE	WGLITDVQPPELETR	TAILRKKAKMERLAV	353
T. th.	SVDLLVDDVQFIK	KERTQEEFFHTFNAL	YEAHQIILSSDRPP	KDILTLEARLSRFE	WGLITDNPAPELETR	TAILKMNAS-SGPED	285
E. coli	SVDALLDDIQFFAN	KERSQEEFFHTFNAL	LEGNQIILTSRYP	KEINGVEDRLKSRFG	WGLTVAIPEPELETR	VAILMKKADENDIRL	317
T. mar.	KVDILLDDVQFLIG	KTGVQTELFHTFNEL	HDSGKQIVICSDREP	QKLSEFQDRLVSRFQ	MGLVAKLEPPDEETR	KSIARKMLEIEHGEL	283
H. pyl.	HCDFLLDDAQFLQG	KPKLEEEFFHTFNEL	HANSKQIVLISDRSP	KNIAGLEDRLKSRFE	WGITAKVMPDLETK	LSIVKQKQQLNQITL	293
P. mar.	PRDLIQFIAGRFTSN	IRELEGALTRAIFAFA	SITGLPMTVDSIAPM	LD-----PNGQGVET	PKQVLDKVAEVFKVT	PDEMRSASRRR-PVS	392
Syn. sp.	PKEVIEYIAHYTSN	IRELEGALIRAIAYT	SLSNVAMTVENIAPV	LN-----PPVEKVAAA	PETIITIVAQHYQLK	VEELLSNSRRR-EVS	377
B. sub.	PNEVMYLIANQIDSN	IRELEGALIRVAYS	SLINKDINADLAAEA	LKDII-PSSKPKVIT	IKEIQRVVGGQFNK	LEDFKAKKRTK-SVA	384
M. tub.	PDDVLELIAASSIERN	IRELEGALIRVTAF	SLNKTPIDKALAEIV	LRDLI-ADANTMQIS	AATIMAATAEYFDTT	VEELRGPGKTR-ALA	441
T. th.	PEDALEYIARQVTSN	IREWEGALMRASPFA	SLNGVELTRAVAACA	LRHLR-P--RELEAD	PLEIIRKAAAGPVRPE	TPGGAHGERRKKEVV	372
E. coli	PGEVAFYIAKRLRSN	VRELEGALNRVIANA	NFTGRAITIDFVREA	LRDLL-A-LQEKLV	IDNIOKTVAEYKIK	VADLLSKRRSR-SVA	404
T. mar.	PEEVLNFVAENVDDN	LRRLRGALIKLLVYK	ETTGKEVDLKEAILL	LKOFIKPNRVKAMP	IDELIEIVAKVTGVP	REEILSNSRNV-KAL	372
H. pyl.	PEEVMEYIAQHISDN	IRQMEGALIKISVNA	NLMNASIDLNLAKTV	LEDL--QKDHAEAGSS	LENILLAVAQSLNLK	SSEIKVSSRQK-NVA	380
P. mar.	QARQVGMVLMRQGTN	LSLPRIGDTFGGKDH	TTVMYAEIQVEKKLS	S-----DPQIA	SQVQKIRDLLQIDSR	RKR----	461
Syn. sp.	LARQVGMVLMRQHTD	LSLPRIGEAFGGKDH	TTVMYSCDKITQLQQ	K-----DWETS	QTLTSLSHRINIAGQ	APES----	447
B. sub.	FPRQIAMVLSREMTD	SSLPKIGEFGGRDH	TTVHAHEKISKLLA	D-----DEQLQ	QHVKEIKEQLK----	-----	446
M. tub.	QSRQIAMVLCRELTD	LSLPKIGQAFG-RDH	TTVMYAQKILSEMA	E-----RREVF	DHVKELTTRIRQORSK	R-----	507
T. th.	LPRQIAMVYLRELTP	ASLPEIGQLFGGRDH	TTVRVAIQKVQELAG	KP-----DREVQ	GLLRTLREACTDPVD	NLWITCG	446
E. coli	RPRQMAMALAKELTN	HSLPEIGDAFGGRDH	TTVLHACRKIEQLRE	E-----SHDIK	EDFSNLIRTLSS----	-----	467
T. mar.	TARRIGMYVAKNYLK	SSLRTIAEKFN-RSH	PVVVDSVKVKVDSLL	KG-----NKQLK	ALIDEVIGEISRRAL	SG-----	440
H. pyl.	LARKLVVYFARLYTP	NPTLSLAQFLDLKDH	SSISKMYSGVKMME	EESKPFVLSLREEIK	NRLNELNDKKTAFNS	SE-----	457

FIG. 19B

REPLACEMENT SHEET

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GTGTCGCACGAGGCCGTCTGGCAACACGTTCTGGAGCACA
 TCCGCCGCAGCATCACCGAGGTGGAGTTCCACACCTGGTT
 TGAAAGGATCCGCCCCCTTGGGGATCCGGGACGGGGTGCTG 120
 GAGCTCGCCGTGCCACCTCCTTTGCCCTGGACTGGATCC
 GGCGCCACTACGCCGGCCTCATCCAGGAGGGCCCTCGGCT
 CCTCGGGGCCAGGCGCCCCGGTTTGAGCTCCGGGTGGTG 240
 CCCGGGGTCTAGTCCAGGAGGACATCTTCCAGCCCCCGC
 CGAGCCCCCGGCCAAGCTCAACCCGAAGATACCTTTAA
 AACTTCGTGGTGGGGCCCAACAACTCCATGGCCCCACGGC 360
 GGCGCCGTGGCCGTGGCCGAGTCCCCCGGCCGGGCCTACA
 ACCCCCTCTTCATCTACGGGGGCCGTGGCCTGGGAAGAC
 CTACCTGATGCACGCCGTGGGCCCACTCCGTGCGAAGCGC 480
 TTCCCCCACATGAGATTAGAGTACGTTTCCACGGAACTT
 TCACCAACGAGCTCATCAACCGGCCATCCGCGAGGGACCG
 GATGACGGAGTTCCGGGAGCGGTACCGCTCCGTGGACCTC 600
 CTGCTGGTGGACGACGTCCAGTTCATCGCCGGAAAGGAGC
 GCACCCAGGAGGAGTTTTTCCACACCTTCAACGCCCTTTA
 CGAGGCCCAACAAGCAGATCATCCTCTCCTCCGACCGGCCG 720
 CCCAAGGACATCCTCACCTGGAGGCGCGCCTGCGGAGCC
 GCTTTGAGTGGGGCCTGATCACCGACAATCCAGCCCCCGA
 CCTGGAAACCCGGATCGCCATCCTGAAGATGAACGCCAGC 840
 AGCGGGCCTGAGGATCCCGAGGACGCCCTGGAGTACATCG
 CCCGGCAGGTCACCTCCAACATCCGGGAGTGGGAAGGGGC
 CCTCATGCGGGCATCGCCTTTCGCCCTCCCTCAACGGCGTT 960
 GAGCTGACCCGCGCCGTGGCGGCCAAGGCTCTCCGACATC
 TTCGCCCCAGGGAGCTGGAGGCGGACCCCTTGGAGATCAT
 CCGCAAAGCGGCGGGACCAGTTCGGCCTGAAACCCCGGGA 1080
 GGAGCTCACGGGGAGCGCCGCAAGAAGGAGGTGGTCCTCC
 CCCGGCAGCTCGCCATGTACCTGGTGCGGGAGCTCACCCC
 GGCTCCCTGCCCGAGATCGACCAGCTCAACGACGACCGG 1200
 GACCACACCACGGTCCTCTACGCCATCCAGAAGGTCCAGG
 AGCTCGCGGAAAGCGACCGGGAGGTGCAGGGCCTCCTCCG
 CACCTCCGGGAGGCGTGCACATGA

FIG. 20A

REPLACEMENT
SHEET

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VSHEAVWQHVLEHIRRSITEVEFHTWFERIRPLGIRDGVL
ELAVPTSFALDWIRRHAYAGLIQEGPRLPGAQAPRFELRVV
PGVVVQEDIFQPPSPPAQAQPEDTFKTSWWGPTTPWPHG 120
GAVAVAESPGRAYNPLFIYGGRGLGKTYLMHAVGPLRAKR
FPHMRLEYVSTETFTNELINRPSARDRMTEFRERYRSVDL
LLVDDVQFIAGKERTQEEFFHTFNALYEAHKQIILSSDRP 240
PKDILTLEARLRSRFEWGLITDNPAPDLETRIAILKMNAS
SGPEDPEDALEYIARQVTSNIREWEGALMRASPFASLNGV
ELTRAVAAKALRHLRPRELEADPLEIIRKAAGPVRPETPG 360
GAHGERRKKEVVLPRQLAMYLVLRELTPASLPEIDQLNDDR
DHTTVLYAIIQKVQELAESDREVQGLLRTLREACT

FIG. 20B

REPLACEMENT
SHEET

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ATGAACATAACGGTTCCCAAAAACTCCTCTCGGACCAGC 40
TTTCCCTCCTGGAGCGCATCGTCCCCCTCTAGAAGCGCCAA
CCCCCTCTACACCTACCTGGGGCTTTACGCCGAGGAAGGG 120
GCCTTGATCCTCTTCGGGACCAACGGGGAGGTGGACCTCG
AGGTCCGCCTCCCCGCCGAGGCCCAAAGCCTTCCCCGGGT 200
GCTCGTCCCCGCCAGCCCTTCTTCCAGCTGGTGCGGAGC
CTTCCTGGGGACCTCGTGGCCCTCGGCCTCGCCTCGGAGC 280
CGGGCCAGGGGGGGCAGCTGGAGCTCTCCTCCGGGCGTTT
CCGCACCCGGCTCAGCCTGGCCCCCTGCCGAGGGCTACCCC 360
GAGCTTCTGGTGCCCCGAGGGGGAGGACAAGGGGGCCTTCC
CCCTCCGGACGCGGATGCCCTCCGGGGAGCTCGTCAAGGC 440
CTTGACCCACGTGCGCTACGCCGCGAGCAACGAGGAGTAC
CGGGCCATCTTCCGCGGGGTGCAGCTGGAGTTCTCCCCCC 520
AGGGCTTCCGGGGCGGTGGCCTCCGACGGGTACCGCCTCGC
CCTCTACGACCTGCCCCTGCCCCAAGGGTTCCAGGCCAAG 600
GCCGTGGTCCCCGCCCGGAGCGTGGACGAGATGGTGCGGG
TCCTGAAGGGGGCGGACGGGGCCGAGGCCGTCCTCGCCCT 680
GGGCGAGGGGGTGTTGGCCCTGGCCCTCGAGGGCGGAAGC
GGGGTCCGGATGGCCCTCCGCCTCATGGAAGGGGAGTTCC 760
CCGACTACCAGAGGGTCATCCCCCAGGAGTTCGCCCTCAA
GGTCCAGGTGGAGGGGGAGGCCCTCAGGGAGGCGGTGCGC 840
CGGGTGAGCGTCCTCTCCGACCGGCAGAACCACCGGGTGG
ACCTCCTTTTGGAGGAAGGCCGGATCCTCCTCTCCGCCGA 920
GGGGGACTACGGCAAGGGGCAGGAGGAGGTGCCCCGCCAG
GTGGAGGGGGCCGGACATGGCCGTGGCCTACAACGCCCGCT 1000
ACCTCCTCGAGGCCCTCGCCCCCGTGGGGGACCGGGCCCA
CCTGGGCATCTCCGGGCCCCACGAGCCCCGAGCCTCATCTGG 1080
GGGGACGGGGAGGGGTACCGGGCGGTGGTGGTGCCCTCA
GGGTCTAG 1128

FIG. 21A

REPLACEMENT
SHEET

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MNITVPKKLLSDQLSLLERIVPSRSANPLYTYLGLYAEEG 40
ALILFGTNGEVDLEVRLPAEAQSLPRVLVPAQPFFQLVRS
LPGDLVALGLASEPGQGQLELSSGRFRTRLAPAEGLYP 120
ELLVPEGEDKGAFPLRTRMPGELVKALTHVRYAASNEEY
RAIFRGVQLEFSPQGFRAVASDGYRLALYDLPLPQGFQAK 200
AVVPARSVDEMVRVLKGADGAEAVLALGEGVLALALEGGS
GVRMALRLMEGEFPDYQRVIPQEFALKVQVEGEALREAVR 280
RVSVLSDRQNHVRVDLLLEEGRILLSAEGDYGKGQEEVPAQ
VEGPDMAVAYNARYLLEALAPVGDRAHLGISGPTSPSLIW 360
GDGEGYRAVVVPLRVZ

FIG. 21B

REPLACEMENT SHEET

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MNITVPKKLLSDQLSLLERIVPSRSANPLYTYLGLYAEAGALILFGTNGEVDLEVRLP
AE MKFTVEREHLKPLQOVSGPLGGRPTLPILGNLLQVADGTLSTGTDLEMEMVARVALV
MKFIIEREQLKPLQOVSGPLGGRPTLPILGNLLKVTENTLSLTGTDLEMEMMARVSL
MQFSISRENLLKPLQOVCGVLSNRPNIPVLNNVLLQIEDYRLTITGTDLEVELSSQTQLS
MHFTIQREALKPLQLVAGVVERQTLPVLSNVLLVQGGQLSLTGTDLLEVELVGRVQLE
MKFTIQNDILTGNLKKITRVLVKNISFPILNIIQVEDGTLSTTTNLEIELISKIEII
* *

T.th.beta
E.coli.bet
P.mirab.be
H.infl.bet
P.put.beta
B.cap.beta

AQSLP-RVLVPAQFFFQVRSPLPGDLVALGLASEPGQGQLELSSGRFRTRLAPAE
GY QPHEPGATTVPARKFFDICRGLP-EGAEIAVQLE---GERMLVRSGRSRFSLSTLP
AADF QSHEIGATTVPARKFFDIWRGLP-EGAEISVELD---GDRLLVRSGRSRFSLSTLP
ASDF SSSENGTFTIPAKKFLDICRTLS-DDSEITVTFE---QDRALVQSGRSRFTLATQ
PAEEY EPAEPGEITVPARKLMDICKSLP-NDALIDIKVD---EQKLLVKAGRSRFTLSTLP
ANDF TKYIPGKTTISGRKIILNICRTLS-EKSKIKMQLK---NKKMYISSENSNYILSTLS
ADTF *

T.th.beta
E.coli.bet
P.mirab.be
H.infl.bet
P.put.beta
B.cap.beta

PELLVPEGEDKGAFFPLRTRMPSGELVKALTHVRYAASNEEYRAIFRGVQLEFSPQGFRAV
PNLDD--WQSEVEFTLPQAT----MKRLIEATQFSMAHQDVRYYLNGMLFETEGEELRTV
PNLDD--WQSEVEFTLPQAT----LKRLIESTQFSMAHQDVRYYLNGMLFETENTELRTV
PNLTD--WQSEVDFELPQNT----LRRLIEATQFSMANQDARYFLNGMKFFETECNLLRTV
PTVEE--GPGSLTCNLEQSK----LRRLIERTSFAMAQQDVRYYLNGMLLEVSRLTLRAV
PNHQN--FDYISKFDISSNI----LKEMIEKTEFSMGKQDVRYYLNGMLLEKKDKFLRSV
* *

T.th.beta
E.coli.bet
P.mirab.be
H.infl.bet
P.put.beta
B.cap.beta

ASDGYRLALYDLPLPQGFQA--KAVVPARSVDENVRLKGADGAEAVALGEGVLALALE
ATDGHRLAVCSMPIGQSLPS-HSVIVPRKGVIELMRMLDG-GDNPLRVQIGSNNIRAHVG
ATDGHRLAVCAMDIGQSLPG-HSVIVPRKGVIELMRMLLDGSGESLLQLQIGSNNLRAHVG
ATDGHRLAVCTISLEQELQN-HSVILPRKGVLELVRLLLET-NDEPARLQIGTNNLRVHLK
STDGHRALCALCSMSAPIEQEDRHQVIVPRKGILELARLLTD-PEGMVSIVLQHHIRATTG
ATDGYRLAISYTQLKKDINF-FSIIIPNKAVMELLKLLNT-QPQLLNILIGSNSIRIYTK
..** ***

T.th.beta
E.coli.bet
P.mirab.be
H.infl.bet
P.put.beta
B.cap.beta

FIG. 22A

REPLACEMENT SHEET

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T. th. beta	GGSGVRMALRMEGEFPDYQVRVPIQEFFALKVQVEGEALREAVRRVSVLSDRQNRVDDLL	
E. coli. bet	---DFIFTSKLVDRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLV	
P. mirab. be	---DFIFTSKLVDRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLV	
H. infl. bet	---NTVFTSKLIDGRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLV	
P. put. beta	---EFTFTSKLVDRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLV	
B. cap. beta	---NLIFTTQLIEGEYPDYKSVLFKEKKNPITITNSILLKKSLLRVAAILAHEKFCGIEIKI	
	* . . . * . . . * . . . * . . . * . . . *	
T. th. beta	EEGRILLSAEGDYK-GQEEVPAQVEGPDMAVAYNARYLLEALAPVG-DRAHLGISGPTS	
E. coli. bet	SENQLKITANNPEQEEAEIILDVITYSGAEMEIGFNVSYVLDVNLALKCENVRMMLTDSVS	
P. mirab. be	TNGQLKITANNPEQEEAEIILDVITYSGAEMEIGFNVSYVLDVNLALKCENVRMMLTDSVS	
H. infl. bet	KENQLKITASNTHEHEAEIILDVITYSGAEMEIGFNVSYVLDVNLALKCENVRMMLTDSVS	
P. put. beta	AAGQLKIQANNPEQEEAEIILDVITYSGAEMEIGFNVSYVLDVNLALKCENVRMMLTDSVS	
B. cap. beta	ENGKFKVLSDNQEEETAEDLFEIDYFGEKIEISINVYVLLDVINNICKSENIALFLNKS	
	* . . . * . . . * . . . * . . . * . . . *	
T. th. beta	PSLIWGDG-EGYRAVVVPLRVZ	(ID#108)
E. coli. bet	SVQIEDAASQSAAYVVMPLRLZ	(ID#109)
P. mirab. be	SVQVENVASAAAAYVVMPLRL-	(ID#110)
H. infl. bet	SCLINCESSCEYVIMPLRL-	(ID#111)
P. put. beta	SALLQEAAGNDSSYVVMPLRL-	(ID#112)
B. cap. beta	SIQIEAENSSNAYVVMPLRLK-	(ID#113)
	* . . . *	

FIG. 22B

REPLACEMENT
SHEET

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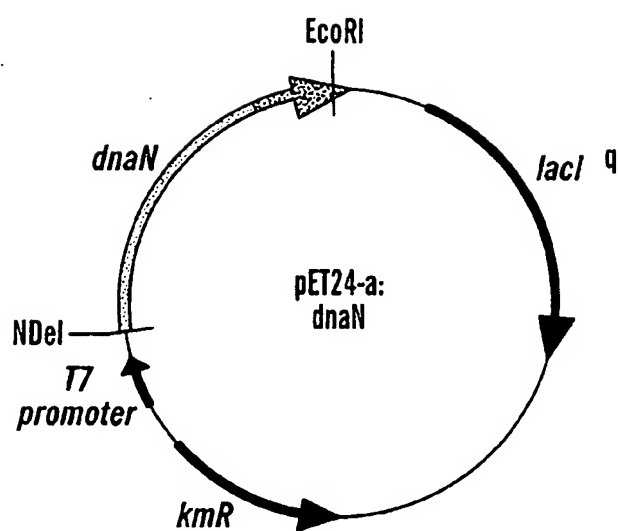


FIG. 23

REPLACEMENT
SHEET

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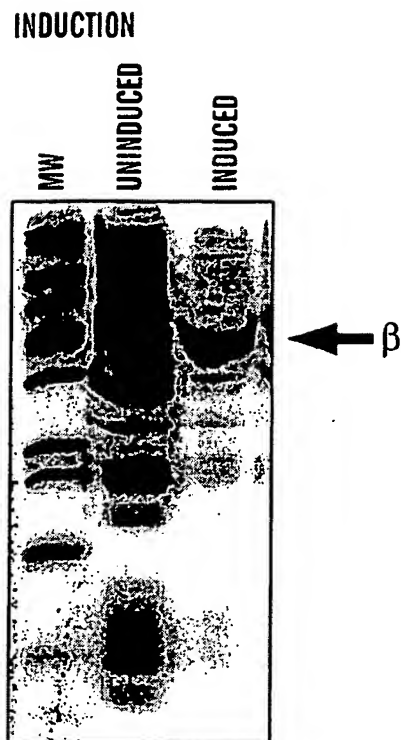


FIG. 24A

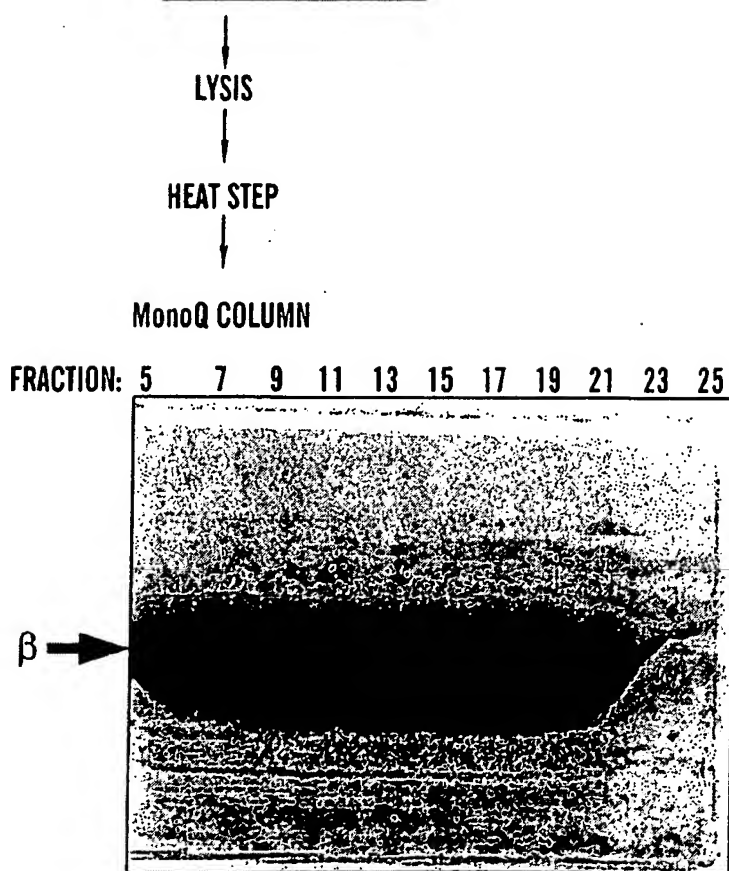


FIG. 24B

REPLACEMENT
SHEET

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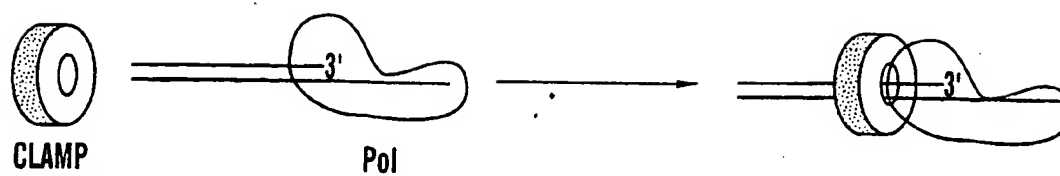


FIG. 25A

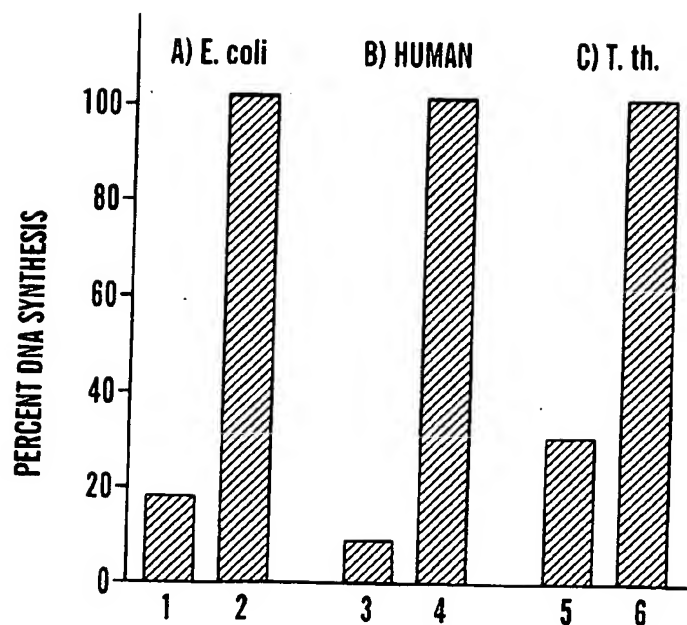


FIG. 25B

REPLACEMENT
SHEET

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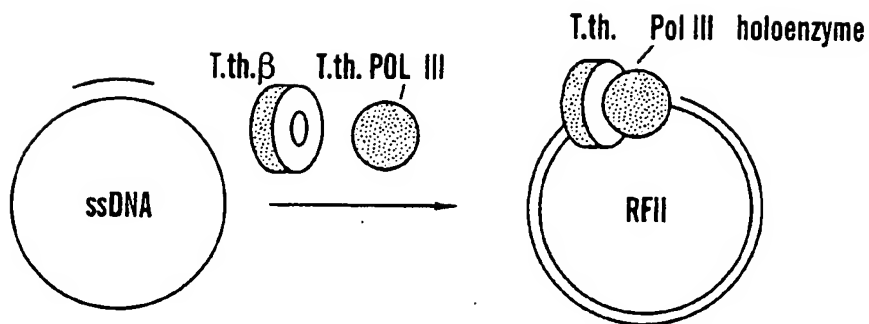


FIG. 26A

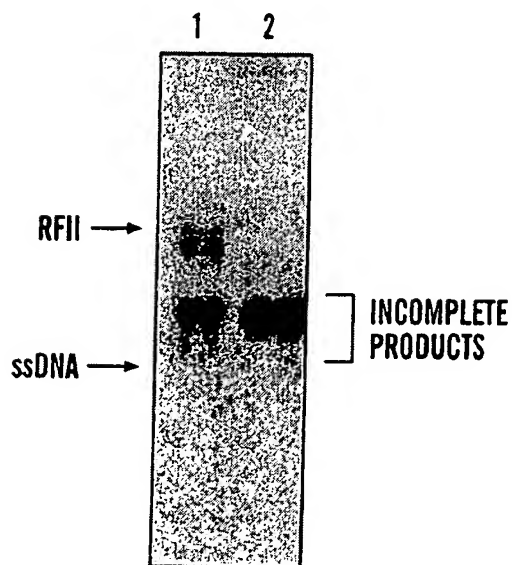


FIG. 26B

REPLACEMENT SHEET

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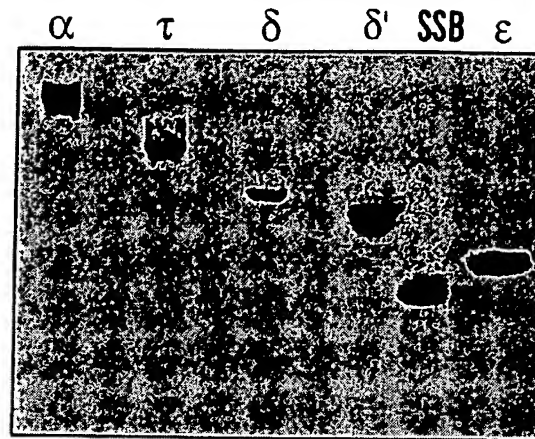


FIG. 27

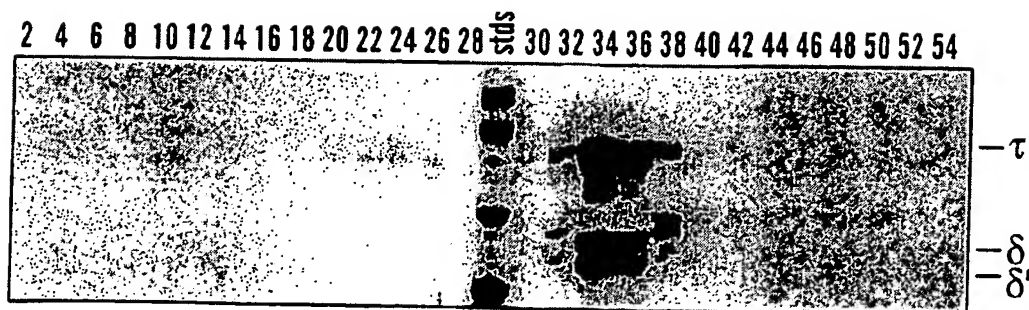


FIG. 28

REPLACEMENT SHEET

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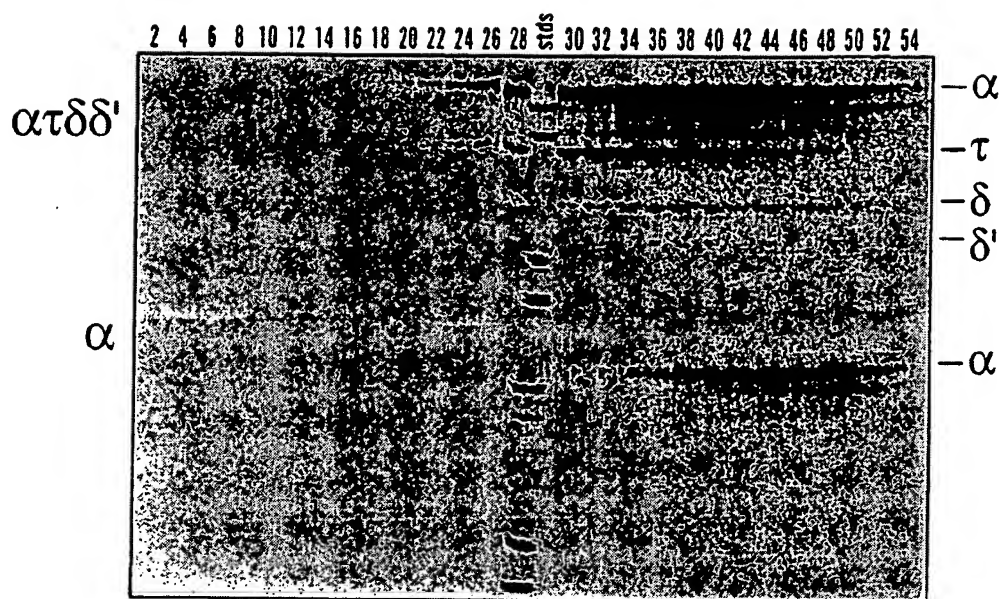


FIG. 29

REPLACEMENT
SHEET

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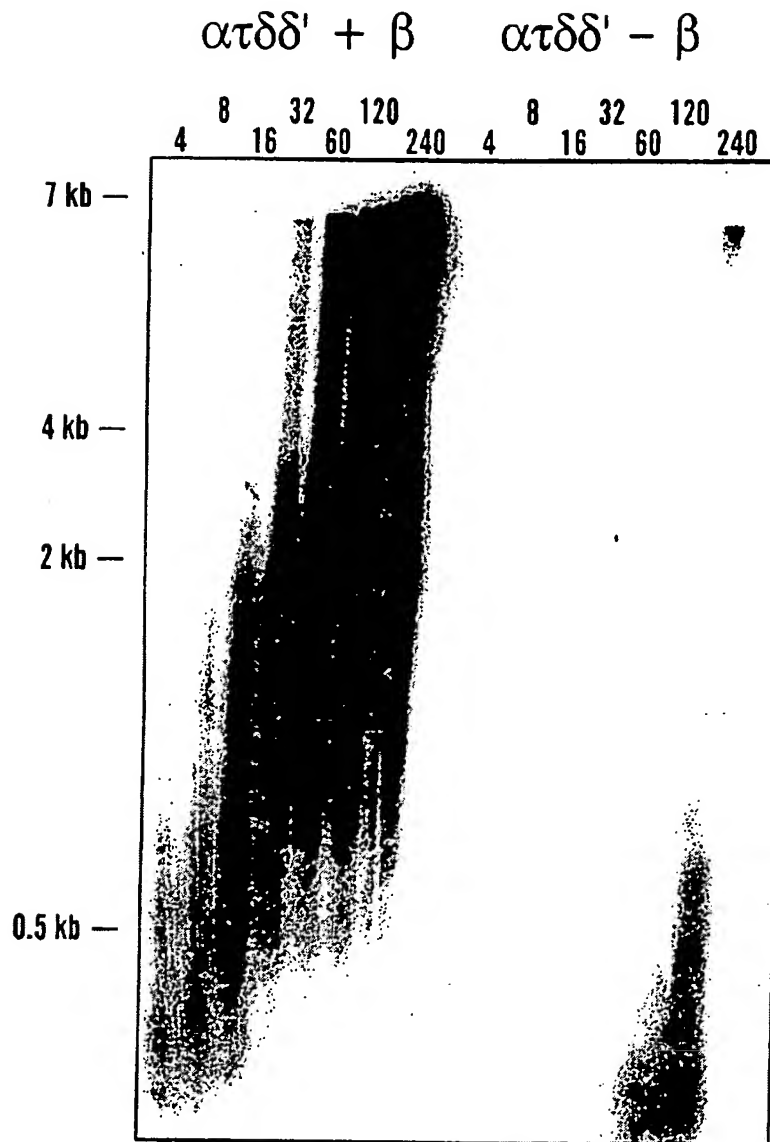


FIG. 30

REPLACEMENT
SHEET

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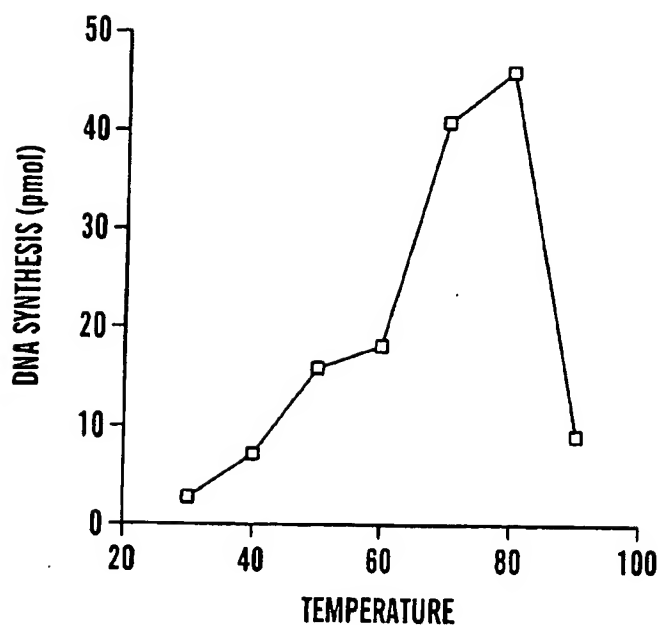


FIG. 31

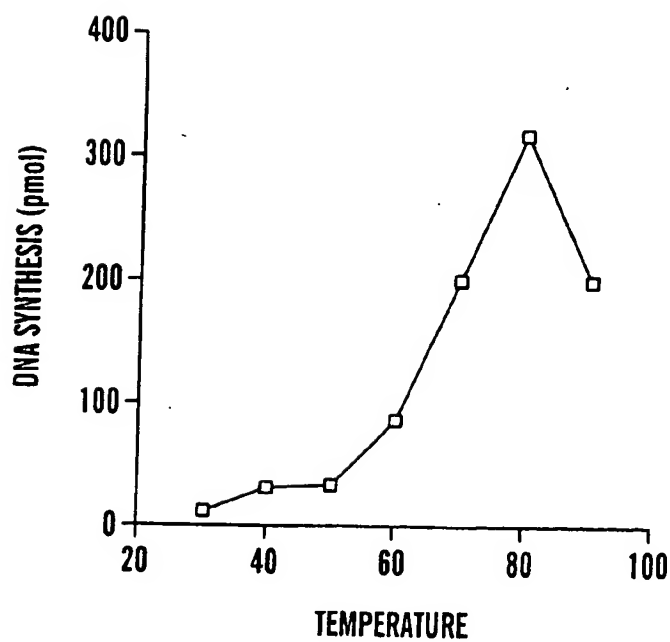


FIG. 32

REPLACEMENT SHEET

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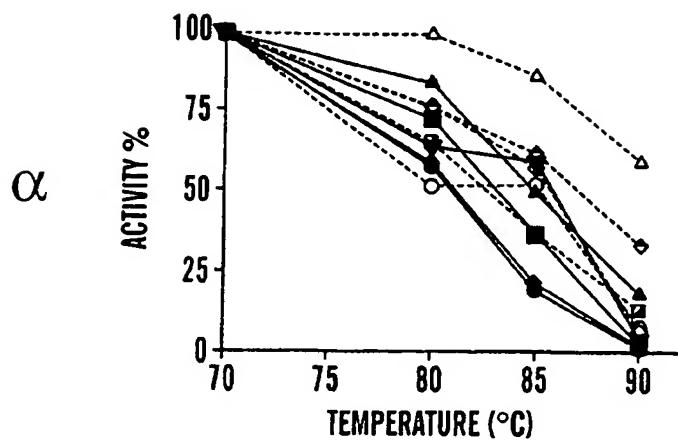


FIG. 33A

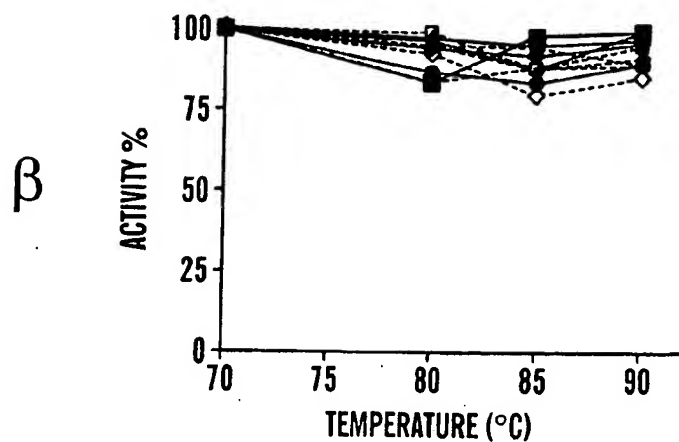


FIG. 33B

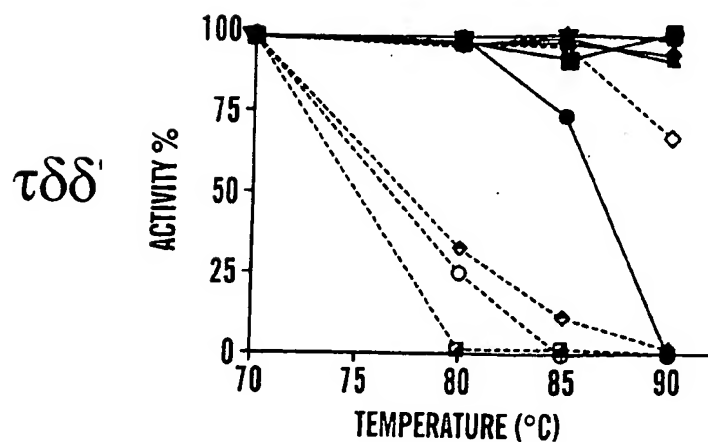


FIG. 33C

REPLACEMENT
SHEET

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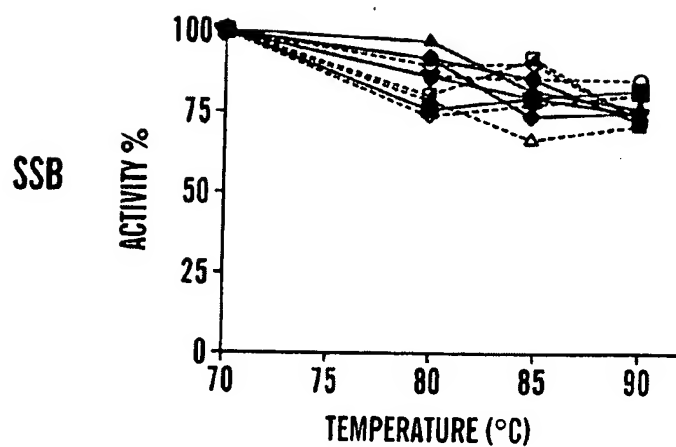


FIG. 33D

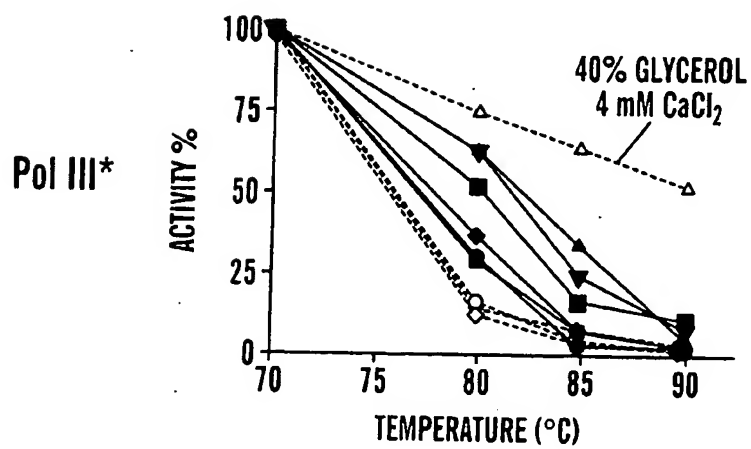


FIG. 33E

REPLACEMENT SHEET

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ATGAGTAAGGATTTTCGTCCACCTTCACCTGCACACCCAGTTCTCACTCCT	
GGACGGGGCTATAAAGATAGACGAGCTCGTGAAAAAGGCAAAGGAGTATG	100
GATACAAAGCTGTTCGGAATGTCAGACCACGGAAACCTCTTCGGTTTCGTAT	
AAATTCTACAAAGCCCTGAAGGCGGAAGGAATTAAGCCCATAATCGGCAT	200
GGAAGCCTACTTTACCACGGGTTTCGAGGTTTGACAGAAAGACTAAAACGA	
GCGAGGACAACATAACCGACAAGTACAACCACCACCTCATACTTATAGCA	300
AAGGACGAAAAGGTCTAAAGAACTTAATGAAGCTCTCAACCCTCGCCTAC	
AAAGAAGGTTTTTACTACAAACCCAGAATTGATTACGAACCTCCTTGAAAA	400
GTACGGGGAGGGCCTAATAGCCCTTACCGCATGCCTGAAAGGTGTTCCCA	
CCTACTACGCTTCTATAAACGAAGTGAAAAAGGCGGAGGAATGGGTAAAG	500
AAGTTCAAGGATATATTCGGAGATGACCTTTATTTAGAACTTCAAGCGAA	
CAACATTTCAGAACAGGAAGTGCGAAACAGGAACCTTAATAGAGATAGCCA	600
AAAAGTACGATGTGAAACTCATAGCGACGCAGGACGCCCCTACCTCAAT	
CCCGAAGACAGGTACGCCCACACGGTTCTTATGGCACTTCAAATGAAAAA	700
GACCATTTCAGAACTGAGTTCGGGAAACTTCAAGTGTTCAAACGAAGACC	
TTCACTTTGCTCCACCCGAGTACATGTGGAAAAAGTTTGAAGGTAAAGTTC	800
GAAGGCTGGGAAAAGGCACTCCTGAACACTCTCGAGGTAATGGAAAAGAC	
AGCGGACAGCTTTGAGATATTTGAAAACCTCCACCTACCTCCTTCCCAAGT	900
ACGACGTTCCGCCCCGACAAAACCTTGAGGAATACCTCAGAGAACTCGCG	
TACAAAGGTTTAAGACAGAGGATAGAAAGGGGACAAGCTAAGGATACTAA	1000
AGAGTACTGGGAGAGGCTCGAGTACGAACTGGAAGTTATAAACAAAATGG	
GCTTTGCGGGATACTTCTTGATAGTTCAGGACTTCATAAACTGGGCTAAG	1100
AAAAACGACATACCTGTTGGACCCGGAAGGGGAAGTGCTGGAGGTTCCCT	
CGTCGCATACGCCATCGGAATAACGGACGTTGACCCTATAAAGCACGGAT	1200
TCCTTTTTTGAGAGGTTCTTAAACCCCGAAAGGGTTTCCATGCCGGATATA	
GACGTGGATTTCTGTTCAGGACAACAGGGAAAAGGTCATAGAGTACGTAAG	1300
GAACAAGTACGGACACGACAACGTAGCTCAGATAATCACCTACAACGTAA	
TGAAGGCGAAGCAAACACTGAGAGACGTCGCAAGGGCCATGGGACTCCCC	1400
TACTCCACCGCGGACAACTCGCAAACTCATTCCTCAGGGGGACGTTCA	
GGGAACGTGGCTCAGTCTGGAAGAGATGTACAAAACGCCTGTGGAGGAAC	1500
TCCTTCAGAAGTACGGAGAACACAGAACGGACATAGAGGACAACGTAAAG	
AAGTTCAGACAGATATGCGAAGAAAGTCCGGAGATAAAACAGCTCGTTGA	1600
GACGGCCCTGAAGCTTGAAGGTCTCACGAGACACACCTCCCTCCACGCCG	
CGGGAGTGGTTATAGCACCAAAGCCCTTGAGCGAGCTCGTTCCCCCTCTAC	1700
TACGATAAAGAGGGCGAAGTCGCAACCCAGTACGACATGGTTCAGCTCGA	
AGAACTCGGTCTCCTGAAGATGGACTTCCTCGGACTCAAACCCCTCACAG	1800
AACTGAACTCATGAAAGAACTCATAAAGGAAAGACACGGAGTGGATATA	
AACTTCCTTGAACCTTCCCCTTGACGACCCGAAAGTTTACAACTCCTTCA	1900
GGAAGGAAAAACCACGGGAGTGTTCCAGCTCGAAAGCAGGGGAATGAAAG	
AACTCCTGAAGAACTAAAGCCCGACAGCTTTGACGACATCGTTGCGGTC	2000
CTCGCACTCTACAGACCCGGACCTCTAAAGAGCGGACTCGTTGACACATA	
CATTAAGAGAAAGCACGGAAAAGAACCCTTGAGTACCCCTTCCCGGAGC	2100
TTGAACCCGTCTTAAGGAAACCTACGGAGTAATCGTTTATCAGGAACAG	
GTGATGAAGATGTCTCAGATACTTTCCGGCTTTACTCCCGGAGAGGCGGA	2200
TACCCTCAGAAAGGCGATAGGTAAGAAGAAAGCGGATTTAATGGCTCAGA	
TGAAAGACAAGTTCATACAGGGAGCGGTGGAAAGGGGATACCCTGAAGAA	2300
AAGATAAGGAAGCTCTGGGAAGACATAGAGAAGTTCGCTTCCTACTCCTT	
CAACAAGTCTCACTCGGTAGCTTACGGGTACATCTCCTACTGGACCGCCT	2400

FIG. 34A

REPLACEMENT SHEET

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ACGTTAAAGCCCCTATCCCGCGGAGTTCTTCGCGGTAAAACTCACAAC	
GAAAAGAACGACAACAAGTTCCTCAACCTCATAAAAGACGCTAAACTCTT	2500
CGGATTTGAGATACTTCCCCCGACATAAAACAAGAGTGATGTAGGATTTA	
CGATAGAAGGTGAAAACAGGATAAGGTTCTGGGCTTGCGAGGATAAAGGGA	2600
GTGGGAGAGGAACTGCTAAGATAATCGTTGAAGCTAGAAAGAAGTATAA	
GCAGTTCAAAGGGCTTGCGGACTTCATAAAACAAACCAAGAACAGGAAGA	2700
TAAACAAGAAAGTCGTGGAAGCACTCGTAAAGGCAGGGGCTTTTGACTTT	
ACTAAGAAAAAGAGGAAAGAACTACTCGCTAAAGTGGCAAACCTCTGAAAA	2800
AGCATTAATGGCTACACAAAACCTCCCTTTTCGGTGCACCGAAAGAAGAAG	
TGGAAGAACTCGACCCCTTAAAGCTTGAAAAGGAAGTTCTCGGTTTTTAC	2900
ATTCAGGGGCACCCCTTGACAACCTACGAAAAGCTCCTCAAGAACCGCTA	
CACACCCATTGAAGATTTAGAAGAGTGGGACAAGGAAAGCGAAGCGGTGC	3000
TTACAGGAGTTATCACGGAACCTCAAAGTAAAAAAGACGAAAAACGGAGAT	
TACATGGCGGTCTTCAACCTCGTTGACAAGACGGGACTAATAGAGTGTGT	3100
CGTCTTCCCGGGAGTTTACGAAGAGGCAAAGGAACTGATAGAAGAGGACA	
GAGTAGTGGTAGTCAAAGGTTTTCTGGACGAGGACCTTGAAACGGAAAAT	3200
GTCAAGTTCGTGGTGAAAGAGGTTTTCTCCCTGAGGAGTTCGCAAAGGA	
GATGAGGAATACCCTTTATATATTCTTAAAAAGAGAGCAAGCCCTAAACG	3300
GCGTTGCCGAAAACTAAAGGGAATTATTGAAAACAACAGGACGGAGGAC	
GGATACAACCTTGTTCTCACGGTTGATCTGGGAGACTACTTCGTTGATTT	3400
AGCACTCCACAAAGATATGAACTAAAGGCTGACAGAAAGGTTGTAGAGG	
AGATAGAAAACTGGGAGTGAAGGTCATAATTTAGTAAATAACCCTTACT	3500
TCCGAGTAGTCCCC	

FIG. 34B

REPLACEMENT SHEET

50/83

MSKDFVHLHLHTQFSLLDGAIKIDELVKKAKEYGYKAVGMSDHGNLFGSY	
KFYKALKAEIGIKPIIGMEAYFTTGSRFDRKTKTSEDNITDKYNHHLILIA	100
KDDKGLKNLMKLSTLAYKEGFYKPRIDYELLEKYGEGLIALTACLKGV	
TYYASINEVKKAEWVKKFKDIFGDDLYLELQANNIPEQEVANRNLIIEIA	200
KKYDVKLIATQDAHYLNPEDRYAHTVLMALQMKKTIHELSSGNFKCSNED	
LHFAPPEYMWKKFEGKFEGWEKALLNTLEVMEKTADSFEIFENSTYLLPK	300
YDVPPDKTLEEYLRELAYKGLRQRIERGQAKDTKEYWERLEYELEVINKM	
GFAGYFLIVQDFINWAKNDIPVGPGRGSAGGSLVAYAIGITDVPDIKHG	400
FLFERFLNPERVSMPCIDVDFCQDNREKVIEWVRNKYGHNDVAQIITYNV	
MKAKQTLRDVARAMGLPYSTADKLAKLIPQGDVQGTWLSLEEMYKTPVEE	500
LLQKYGEHRDIEDNVKKFRQICEESPEIKQLVETALKLEGLTRHTSLHA	
AGVVIAPKPLSELVPLYDYDKEGEVATQYDMVQLEELGLLKMDFLGLKTLT	600
ELKLMKELIKERHGVDFINLELPLDDPKVYKLLQEGKTTGVFQLESRGMK	
ELLKKLKPDSFDDIVAVLALYRPGPLKSGLVDTYIKRKHGKEPVEYPFPE	700
LEPVLKETYGIVIVYQEQVMKMSQILSGFTPGADTLRKAIGKKKADLMAQ	
MKDKFIQGAVERGYPEEKIRKLWEDIEKFASYSFNKSHSVAYGYISYWTA	800
YVKAHYPAEFFAVKLTTTEKNDNKFLNLIKDAKLFGFEILPPDINKSDVGF	
TIEGENRIRFGLARIKGVGEETAKIIVEARKKYKQFKGLADFINKTKNRK	900
INKKVVEALVKAGAFDFTKKKRKELLAKVANSEKALMATQNSLFGAPKEE	
VEELDPLKLEKEVLGFYISGHPLDNYEKLLKNRYTPIEDLEEWDKESEAV	1000
LTGVITELKVKKTKNGDYMAVFNLVDKTGLIECVVFPGVYEEAKELIEED	
RVVVVKGFLDEEDLETENVKFVVKEVFSPEEFAKEMRNTLYIFLKREQALN	1100
GVAEKLKGI IENNRTEDGYNLVLTVDLGDYFVDLALPQDMKLKADRKVVE	
EIEKLGVKVII	1161

FIG. 35

REPLACEMENT SHEET

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ATGAACTACGTTCCCTTCGCGAGAAAGTACAGACCGAAATTCTTCAGGGA	
AGTAATAGGACAGGAAGCTCCCGTAAGGATACTCAAAAACGCTATAAAAA	100
ACGACAGAGTGGCTCACGCCTACCTCTTTGCCGGACCGAGGGGGGTGGG	
AAGACGACTATTGCAAGAATTCTCGCAAAAGCTTTGAACTGTAAAAATCC	200
CTCCAAAGGTGAGCCCTGCGGTGAGTGCGAAAACCTGCAGGGAGATAGACA	
GGGGTGTGTTCCCTGACTTAATTGAAATGGATGCCGCCTCAAACAGGGGT	300
ATAGACGACGTAAGGGCATTAAAAGAAGCGGTCAATTACAAACCTATAAA	
AGGAAAGTACAAGGTTTACATAATAGACGAAGCTCACATGCTCACGAAAG	400
AAGCTTTCAACGCTCTCTTAAAAACCCTCGAAGAGCCCCCTCCAGAACT	
GTTTTCTGTCCTTTGTACCACGGAGTACGACAAAATTCTTCCCACGATACT	500
CTCAAGGTGTCAGAGGATAATCTTCTCAAAGGTAAAGAAAGGAAAAAGTAA	
TAGAGTATCTAAAAAGATATGTGAAAAGGAAGGGATTGAGTGCGAAGAG	600
GGAGCCCTTGAGGTTCTGGCTCATGCCTCTGAAGGGTGCATGAGGGATGC	
AGCCTCTCTCCTGGACCAGGCGAGCGTTTACGGGGAAGGCAGGGTAACAA	700
AAGAAGTAGTGGAGAACTTCCTCGGAATTCTCAGTCAGGAAAGCGTTAGG	
AGTTTTCTGAAATTGCTTCTGAACTCAGAAGTGACGAAGCTATAAAGTT	800
CCTCAGAGAACTCTCAGAAAAGGGCTACAACCTGACCAAGTTTTGGGAGA	
TGTTAGAAGAGGAAGTGAGAAACGCAATTTTAGTAAAGAGCCTGAAAAAT	900
CCCGAAAGCGTGGTTCAGAACTGGCAGGATTACGAAGACTTCAAAGACTA	
CCCTCTGGAAGCCCTCCTCTACGTTGAGAACCTGATAAACAGGGGTAAAG	1000
TTGAAGCGAGAACGAGAGAACCCCTTAAGAGCCTTTGAACTCGCGGTAAATA	
AAGAGCCTTATAGTCAAAGACATAATTCCCGTATCCCAGCTCGGAAGTGT	1100
GGTAAAGGAAACCAAAAAGGAAGAAAAGAAAGTTGAAGTAAAAGAAGAGC	
CAAAAGTAAAAGAAGAAAAACCAAAGGAGCAGGAAGAGGACAGGTTCCAG	1200
AAAGTTTTTAAACGCTGTGGACGGCAAAATCCTTAAAAGAATACTTGAAGG	
GGCAAAAAGGGAAGAAAGAGACGGAAAAATCGTCCTAAAGATAGAAGCCT	1300
CTTATCTGAGAACCATGAAAAAGGAATTTGACTCACTAAAGGAGACTTTT	
CCTTTTTTTAGAGTTTGAACCCGTGGAGGATAAAAAAACCTCAGAAGTC	1400
CAGCGGGACGAGGCTGTTTTAAAGGTAAAGGAGCTCTTCAATGCAAAAAT	
ACTCAAAGTACGAAGTAAAAGCTAAGGTCATAAAGGTGAGAATGCCCGTG	1500
GAAGAGATAGGGCTGTTTAAACGCACTAATAGACGGCTTGCCCAGGTACGC	
ACTCACGAGGACGAAGGAAAAGGGAAAGGGAGAAGTTTTCGTTTTAGCGA	1600
CTCCTTATAAAGTCAAGGAATTGATGGAAGCTATGGAGGGTATGAAAAAA	
CACATAAAGGATTTAGAAAATCCTCGGAGAGACGGATGAGGATTTAACTTT	1700
TTAAAGTATGGGTGTATCTGAGCAAAGGTTTAAAGCTAAAAACAAACCTGA	
AACCCGCAGGGGACCAGCCGAAAGCCATAAAAAAACTCCTTGAAAACCTA	1800
AGGAAAGGCGTAAAAGAACAAACACTTCTCGGAGTCACGGGAAGCGGAAA	
GACTTTTACTCTAGCAAACGTAATAGCGAAGTACAACAACCAACTCTTG	1900
TGGTAGTTTACAACAAAATTCTCGCGGCACAGCTATACAGGGAGTTTAAA	
GAACTATTCCCTGAAAACGCTGTAGAGTACTTTGTCTCTTACTACGACTA	2000
TTACCAACCTGAAGCCTACATTCCCGAAAAAGATTTATACATAGAAAAGG	
ACGCGAGTATAAACGAAAGCTGGAACGTTTCAGACACTCCGCCACGATAT	2100
CCGTTCTAGAAAGGAGGGACGTTATAGTAGTTGCTTCAGTTTCTTGCCATA	
TACGGACTCGGGAAACCTGAGCACTACGAAAACCTGAGGATAAACTCCA	2200
AAGGGGAATAAGACTGAACTTGAGTAAGCTCCTGAGGAACTCGTTGAGC	
TAGGATATCAGAGAAATGACTTTGCCATAAAGAGGGCTACCTTCTCGGTT	2300
AGGGGAGACGTGGTTGAGATAGTCCCTTCTCACACGGAAGATTACCTCGT	
GAGGGTAGAGTTCTGGGACGACGAAGTTGAAAGAATAGTCCTCATGGACG	2400
CTCTGAAC	

FIG. 36

REPLACEMENT
SHEET

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MNYVPFARKYRPKFFREVIGQEAPVRILKNAIKNDRVAHAYLFAGPRGVG	
KTTIARILAKALNCKNPSKGEPCECENCREIDRGVFPDLIEMDAASNRG	100
IDDVRLAKEAVNYKPIKGKYKVYIIDEAHMLTKEAFNALLKTLEPPPPRT	
VFVLCTTEYDKILPTILSRCQRIIFSKVRKEKVIEYLKKICEKEGIECEE	200
GALEVLAHASEGCMRDAASLLDQASVYGEGRVTKEVVENFLGILSQESVR	
SFLKLLNSEVDEAIKFLRELSEKGYNLTKFWEMLEEEVRNAILVKSLKN	300
PESVVQNWQDYEDFKDYPLEALLYVENLINRGKVEARTREPLRAFELAVI	
KSLIVKDIIPVSQLGSVVKETKKEEKKVEVKEEPKVKEEKPKQEEDRFQ	400
KVLNAVDGKILKRILEGAKREERDGGKIVLKIEASYLRTMKKEFDLSKETF	
PFLEFEPVEDKKKPQKSSGTRLF	473

FIG. 37

REPLACEMENT SHEET

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ATGCGCGTTAAGGTGGACAGGGAGGAGCTTGAAGAGGTTCTTAAAAAAGC	
AAGAGAAAGCACGGAAAAAAAGCCGCACTCCCGATACTCGCGAACTTCT	100
TACTCTCCGCAAAAGAGGAAAACTTAATCGTAAGGGCAACGGACTTGGAA	
AACTACCTTGTAAGTCTCCGTAAAGGGGGAGGTTGAAGAGGAAGGAGAGGT	200
TTGCGTCCACTCTCAAAAACTCTACGATATAGTCAAGAACTTAAATTCCG	
CTTACGTTTACCTTCATACGGAAGGTGAAAACTCGTCATAACGGGAGGA	300
AAGAGTACGTACAACTTCCGACAGCTCCCGCGGAGGACTTTCCCGAATT	
TCCAGAAATCGTAGAAGGAGGAGAAACACTTTCGGGAAACCTTCTCGTTA	400
ACGGAATAGAAAAGGTAGAGTACGCCATAGCGAAGGAAGAAGCGAACATA	
GCCCTTCAGGGAATGTATCTGAGAGGATACGAGGACAGAATTCACTTTGT	500
GTTTCGGACGGTCACAGGCTTGCACTTTATGAACCTCTACGTAAACATTGA	
AAAGAGTGAAGACGAGTCTTTTGCTTACTTCTCCACTCCCGAGTGGAAC	600
TCGCCGTTAGCTCCTGGAAGGAGAATTCCCGGACTACATGAGTGTATCC	
CTGAGGAGTTTTTCGGCGGAAGTCTTGTTTGAGACAGAGGAAGTCTTAAAG	700
GTTTTAAAGAGGTTGAAGGCTTTAAGCGAAGGAAAAGTTTTTCCCGTGAA	
GATTACCTTAAGCGAAAACCTTGCCATCTTTGAGTTCGCGGATCCGGAGT	800
TCGGAGAAGCGAGAGAGGAAATTGAAGTGGAGTACACGGGAGAGCCCTTT	
GAGATAGGATTCAACGGAAATACCTTATGGAGGCGCTTGACGCCTACGAC	900
AGCGAAAGAGTGTGGTTCAAGTTCACAACCCCCGACACGGCCACTTTATT	
GGAGGCTGAAGATTACGAAAAGGAACCTTACAAGTGCATAATAATGCCGA	1000
TGAGGGTGTAGCCATGAAAAAGCTTTAATCTTTTTATTGAGCTTGAGCC	
TTTTAATTCCTGCGTTTAGCGAAGCCAAACCCAAGTCTTC	1090

FIG. 38

MRVKVDREELEEVLLKKARESTEKKAALPILANFLLSAKEENLIVRATDLE	
NYLVVSVKGEVEEEGEVVCVHSQKLYDIVKNLNSAYVYLHTEGEKLVITGG	100
KSTYKLPAPAEDFPEFPEIVEGGETLSGNLLVNGIEKVEYAIKEEANI	
ALQGMYLRGYEDRIHFVGS DGHRLALYEPLGEFSKELLI PRKSLKVLKKL	200
ITGIEDVNIEKSEDESFAFYFSTPEWKLA VRLLEGEFPDYMSVIPPEFSAE	
VLFEETEEVLKVLKRLKALSEGKVPVKITLSENLAIFEFADPEFGEAREE	300
IEVEYTGEPFEIGFNGKYLMEALDAYDSERVWFKFTTPDTATLLEAEDYE	
KEPYKCIIMPMRV	363

FIG. 39

REPLACEMENT SHEET

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GTGGAAACCACAATATTCCAGTTCCAGAAAACCTTTTTTCACAAAACCTCC	
GAAGGAGAGGGTCTTCGTCCTTCATGGAGAAGAGCAGTATCTCATAAGAA	100
CCTTTTTTGTCTAAGCTGAAGGAAAAGTACGGGGAGAATTACACGGTTCTG	
TGGGGGGATGAGATAAGCGAGGAGGAATTCTACACTGCCCTTTCCGAGAC	200
CAGTATATTCGGCGGTTCAAAGGAAAAAGCGGTGGTCATTTACAACCTTCG	
GGGATTTTCCTGAAGAAGCTCGGAAGGAAGAAAAAGGAAAAAGAAAGGCTT	300
ATAAAAGTCCTCAGAAACGTAAAGAGTAACTACGTATTTATAGTGTACGA	
TGCGAAACTCCAGAAACAGGAACTTTCTTCGGAACCTCTGAAATCCGTAG	400
CGTCTTTTCGGCGGTATAGTGGTAGCAAACAGGCTGAGCAAGGAGAGGATA	
AAACAGCTCGTCTTAAGAAGTTCAAAGAAAAAGGGATAAACGTAGAAAA	500
CGATGCCCTTGAATACCTTCTCCAGCTCACGGGTACAACTTGATGGAGC	
TCAAACCTTGAGGTTGAAAAACTGATAGATTACGCAAGTGAAAAGAAAATT	600
TTAACACTCGATGAGGTAAAGAGAGTAGCCTTCTCAGTCTCAGAAAACGT	
AAACGTATTTGAGTTCGTTGATTTACTCCTCTTAAAGATTACGAAAAGG	700
CTCTTAAAGTTTTGGACTCCCTCATTTCTTCGGAATACACCCCTCCAG	
ATTATGAAAATCCTGTCCTCCTATGCTCTAAAACTTTACACCCTCAAGAG	800
GCTTGAAGAGAAGGGAGAGGACCTGAATAAGGCGATGGAAAGCGTGGGAA	
TAAAGAACAACCTTTCTCAAGATGAAGTTCAAATCTTACTTAAAGGCAAAC	900
TCTAAAGAGGACTTGAAGAACCTAATCCTCTCCCTCCAGAGGATAGACGC	
TTTTTCTAACTTTACTTTTCAGGACACAGTGCAGTTGCTGGGGATTTCTT	1000
GACCTCAAGACTGGAGAGGGAAGTTGTGAAAAATACTTCTCATGGTGGAT	
AATCTTTTTTATGAAGTTTGCGGTTTGCGTTTTTCCCGGTTCT	1093

FIG. 40

VETTIFQFQKTFFTKPPKERVFLHGEEQYLIRTFLSKLKEKYGENYTVL	
WGDEISEEEFYTALSETSIFFGSKEKAVVIYNFGDFLKKLGRKKKEKERL	100
IKVLRNVKSNYVFIVYDAKLQKQELSSEPLKSVASF GGIVVANRLSKERI	
KQLVLKKFKEKGINVENDALEYLLQLTGYNLMELKLEVEKLIDYASEKKI	200
LTLDEVKRVAFSVSENVNVFEFVDLLLLKDYEKALKVLDLISFGIHPLQ	
IMKILSSYALKLYTLKRLEEKGEDLNKAMESVG IKNFLKMKFKSYLKAN	300
SKEDLKNLILSLQRIDAFSKLYFQDTVQLLRDFLTSRLEREVVKNTSHGG	

FIG. 41

REPLACEMENT SHEET

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ATGGAAAAAGTTTTTTTGGAAAACTCCAGAAAACCTTGCACATACCCGG	
AGGACTCCTTTTTTTACGGCAAAGAAGGAAGCGGAAAGACGAAAACAGCTT	100
TTGAATTTGCAAAGGTATTTTATGTAAGGAAAACGTACCTGGGGATGCG	
GAAGTTGTCCCTCCTGCAAACACGTAAACGAGCTGGAGGAAGCCTTCTTT	200
AAAGGAGAAATAGAAGACTTTAAAGTTTATAAGACAAGGACGGTAAAAAG	
CACTTCGTTTACCTTATGGGCGAACATCCCGACTTTGTGGTAATAATCCC	300
GAGCGGACATTACATAAAGATAGAACAGATAAGGGAAGTTAAGAAGTTTG	
CCTATGTGAAGCCCGCACTAAGCAGGAGAAAAGTAATTATAATAGACGAC	400
GCCACGCGATGACCTCTCAGGCGGCAAACGCTCTTTTAAAGGTATTGGA	
AGAGCCACCTGCGGACACCACCTTTATCTTGACCACGAACAGGCGTTCTG	500
CAATCCTGCCGACTATCCTCTCCAGAAGTTTCAAGTGAGTTCAAGGGC	
TTTTCAAGTAAAGAGGTTATGGAAATAGCGAAAGTAGACGAGGAAATAGC	600
GAACTCTCTGGAGGCAGTCTAAAAAGGGCTATCTTACTAAAGGAAAACA	
AAGATATCCTAAACAAAGTAAAGGAATTCTTGGAACGAGCCGTTAAAA	700
GTTTACAAGCTTGCAAGTGAATTGCAAAAGTGGGAACCTGAAAAGCAAAA	
ACTCTTCCTTGAAATTATGGAAGAATTGGTATCTCAAAAATTGACCGAAG	800
AGAAAAAGACAATTACACCTACCTTCTTGATACGATCAGACTCTTTAAA	
GACGGACTCGCAAGGGGTGTAAACGAACCTCTGTGGCTGTTTACGTTAGC	900
CGTTCAGGCGGATTAATAAACCGTTATTGATTCCGTAACATTTAAACCTT	
AATCTAAATTATGAGAGCCTTTGAAGGAGGTCTGGTATGGAAAATTTGAA	1000
GATTAGATATATAGATACGAGGAAGATAGGAACCGTGAGCGGTGTAAAG	
T	1051

FIG. 42

MEKVFLEKLQKTLHIPGGLLFYKGESGKTKTAFEFAKGILCKENVPWGC	
GSCPSCKHVNELEEAFFKGEIEDFKVYKDKDGKKHFVYLMGEHPDFVVII	100
PSGHYIKIEQIREVKNFAYVKPALSRKVIIIDDAHAMTSQAANALLKVL	
EEPPADTTFILTTNRRSAILPTILSRTFQVEFKGFSVKEVMEIAKVDEEI	200
AKLSGGSLLKRAILLKENKDILNKVKEFLNEPLKVYKLASEFEKWEPEKQ	
KLFLIMEELVSQKLTEEKKNYTYLLDTRLFKDGLARGVNEPLWLFTL	300
AVQAD	

FIG. 43

REPLACEMENT
SHEET

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ATGAACTTCCTGAAAAAGTTCCTTTTACTGAGAAAAGCTCAAAAGTCTCC	
TTACTTCGAAGAGTTCTACGAAGAAATCGATTTGAACCAGAAGGTGAAAG	100
ATGCAAGGTTTGTAGTTTTTGACTGCGAAGCCACAGAACTCGACGTAAAG	
AAGGCAAAACTCCTTTCAATAGGTGCGGTTGAGGTTAAAAACCTGGAAAT	200
AGACCTCTCTAAATCTTTTTACGAGATACTCAAAAGTGACGAGATAAAGG	
CGGCGGAGATACATGGAATAACCAGGGAAGACGTTGAAAAGTACGGAAAG	300
GAACCAAAGGAAGTAATATACGACTTTCTGAAGTACATAAAGGGAAGCGT	
TCTCGTTGGCTACTACGTGAAGTTTGACGTCTCACTCGTTGAGAAGTACT	400
CCATAAAGTACTTCCAGTATCCAATCATCAACTACAAGTTAGACCTGTTT	
AGTTTCGTGAAGAGAGAGTACCAGAGTGGCAGGAGTCTTGACGACCTTAT	500
GAAGGAACTCGGTGTAGAAATAAGGGCAAGGCACAACGCCCTTGAAGATG	
CCTACATAACCGCTCTTCTTTTCCTAAAGTACGTTTACCCGAACAGGGAG	600
TACAGACTAAAGGATCTCCCGATTTTCCTT	

FIG. 44

MNFLKKFLLLRKAQKSPYFEEFYEEIDLNQVKDARFVVDCEATELDVK	
KAKLLSIGAVEVKNLEIDLKSFYEILKSDEIKAAEIHGITREDVEKYGK	100
EPKEVIYDFLKYIKGSVLVGYVVKFDVSLVEKYSIKYFQYPIINYKLDLF	
SFVKREYQSGRSLDDLMKELGVEIRARHNALEDAYITALLFLKYVYPNRE	200
YRLKDLPIFL	

FIG. 45

REPLACEMENT
SHEET

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ATGCTCAATAAGGTTTTTATAATAGGAAGACTTACGGGTGACCCCGTTAT	
AACTTATCTACCGAGCGGAACGCCCGTAGTAGAGTTTACTCTGGCTTACA	100
ACAGAAGGTATAAAAACCAGAACGGTGAATTTTCAGGAGGAAAGTCACTTC	
TTTGACGTAAAGGCGTACGGAAAAATGGCTGAAGACTGGGCTACACGCTT	200
CTCGAAAGGATACCTCGTACTCGTAGAGGGAAGACTCTCCAGGAAAAGT	
GGGAGAAAGAAGGAAAGAAGTTCTCAAAGGTCAGGATAATAGCGGAAAAC	300
GTAAGATTAATAAACAGGCCGAAAGGTGCTGAACTTCAAGCAGAAGAAGA	
GGAGGAAGTTCCTCCCATTTGAGGAGGAAATTGAAAAACTCGGTAAAGAGG	400
AAGAGAAGCCTTTTACCGATGAAGAGGACGAAATACCTTTTAAATTTTGA	
GGAGGTAAAGTATGGTAGTGAGAGCTCCTAAGAAGAAAGTTTGTATGTA	500
CTGTGAACAAAAGAGAGAGCCAGATT	

FIG. 46

MLNKVFIIGRLTGDPVITYLPSGTPVVEFTLAYNRRYKNQNGEFQEESHF	
FDVKAYGKMAEDWATRFSGYLVLVEGRLSQEKWEKEGKKFSKVRIIAEN	100
VRLINRPKGAEHQAEVEEVPPIEEEIEKLGKEEEKPFTDEEDEIPF	

FIG. 47

REPLACEMENT SHEET

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ATGCAATTTGTGGATAAACTTCCCTGTGACGAATCCGCCGAGAGGGCGGT	
TCTTGGCAGTATGCTTGAAGACCCCGAAAACATACCTCTGGTACTTGAAT	100
ACCTTAAAGAAGAAGACTTCTGCATAGACGAGCACAAAGCTACTTTTCAGG	
GTTCTTACAAACCTCTGGTCCGAGTACGGCAATAAGCTCGATTTCGTATT	200
AATAAAGGATCACCTTGAAAAGAAAACTTACTCCAGAAAATACCTATAG	
ACTGGCTCGAAGAACTCTACGAGGAGGCGGTATCCCCTGACACGCTTGAG	300
GAAGTCTGCAAAATAGTAAAACAACGTTCCGCACAGAGGGCGATAATTCA	
ACTCGGTATAGAACTCATTACAAAAGGAAAGGAAAACAAAGACTTTCACA	400
CATTAATCGAGGAAGCCCAGAGCAGGATATTTTCCATAGCGGAAAGTGCT	
ACATCTACGCAGTTTTTACCATGTGAAAGACGTTGCGGAAGAAGTTATAGA	500
ACTCATTTATAAATTCAAAAGCTCTGACAGGCTAGTCACGGGACTCCCAA	
GCGGTTTCACGGAACCTCGATCTAAAGACGACGGGATTCCACCCTGGAGAC	600
TTAATAATACTCGCCGCAAGACCCGGTATGGGGAAAACCGCCTTTATGCT	
CTCCATAATCTACAATCTCGCAAAAGACGAGGGAAAACCCCTCAGCTGTAT	700
TTTCCTTGGAATGAGCAAGGAACAGCTCGTTATGAGACTCCTCTCTATG	
ATGTCGGAGGTCCCACTTTTCAAGATAAGGTCTGGAAGTATATCGAATGA	800
AGATTTAAAGAAGCTTGAAGCAAGCGCAATAGAAGTTCGCAAAGTACGACA	
TATACCTCGACGACACACCCGCTCTCACTACAACGGATTTAAGGATAAGG	900
GCAAGAAAGCTCAGAAAGGAAAAGGAAGTTGAGTTCGTGGCGGTGGACTA	
CTTGCAACTTCTGAGACCGCCAGTCCGAAAGAGTTCAAGACAGGAGGAAG	1000
TGGCAGAGGTTTCAAGAACTTAAAAGCCCTTGCAAAGGAACTTCACATT	
CCCGTTATGGCACTTGCGCAGCTCTCCCGTGAGGTGGAAAAGAGGAGTGA	1100
TAAAAGACCCAGCTTGCGGACCTCAGAGAATCCGGACAGATAGAACAGG	
ACGCAGACCTAATCCTTTTCTCCACAGACCCGAGTACTACAAGAAAAAG	1200
CCAAATCCCGAAGAGCAGGGTATAGCGGAAGTGATAATAGCCAAGCAAAG	
GCAAGGACCCACGGACATTGTGAAGCTCGCATTATTAAGGAGTACACTA	1300
AGTTTGCAAACCTAGAAAGCCCTTCTGAACAACCTCCTGAAGAAGAGGAA	
CTTTCCGAAATTATTGAAACACAGGAGGATGAAGGATTTCGAAGATATTGA	1400
CTTCTGAAAATTAAGGTTTATAATTTTATCTTGGCTATCCGGGGTAGCT	
CAATCGGCAGAGCGGGTGGCTG	1472

FIG. 48

MQFVDKLPCDESAERAUAVLGSMLDPEINIPVLEYLKEEDFCIDEHKLLFR	
VLTNLWSEYGNKLDVFLIKDHLEKKNLLQKIPIDWLEELYEEAVSPDTLE	100
EVCKIVKQRSAQRAIIQLGITSTQFYHVKDVAEEVIELIYKFKSSDRLVT	
GLPSGFTELDLKTTFGHPGDLIIAARPGMGKTAFMLSIIYNLAKDEGKP	200
SAVFSLEMSKEQLVMRLLSMMSEVPLFKIRSGSISNEDLKKLEASAIELA	
KYDIYLDLTPALTTTDLRIRARKLRKEKEVEFVAVDYLQLLRPPVRKSSR	300
QEEVAEVSRLKALAKELHIPVMALAQLSREVEKRSQKRPQLADLRESGQ	
IEQDADLILFLHRPEYYKKKPNPEEQGIAEVIIAKQRQGPTDIVKLAFIK	400
EYTKFANLEALPEQPPEEEELSEIIETQDEGEFEDIDF	

FIG. 49

REPLACEMENT SHEET

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ATGTCCTCGGACATAGACGAACTTAGACGGGAAATAGATATAGTAGACGT	
CATTTCCGAATACTTAACTTAGAGAAGGTAGGTTCCAATTACAGAACGA	100
ACTGTCCCTTTTACCCTGACGATACACCCTCCTTTTACGTGTCTCCAAGT	
AAACAAATATTCAAGTGTTTCGGTTGCGGGGTAGGGGGAGACGCGATAAA	200
GTTTCGTTTCCCTTTACGAGGACATCTCCTATTTTGAAGCCGCCCTTGAAC	
TCGCAAAACGCTACGGAAAGAAATTAGACCTTGAAAAGATATCAAAAGAC	300
GAAAAGGTATACGTGGCTCTTGACAGGGTTTGTGATTTCTACAGGGAAAG	
CCTTCTCAAAAACAGAGAGGCAAGTGAGTACGTAAAGAGTAGGGGAATAG	400
ACCCTAAAGTAGCGAGGAAGTTTGATCTTGGGTACGCACCTTCCAGTGAA	
GCACTCGTAAAAGTCTTAAAAGAGAACGATCTTTTAGAGGCTTACCTTGA	500
AACTAAAACCTCCTTTCTCCTACGAAGGGTGTTTACAGGGATCTCTTTC	
TTTCGGCGTGTCGTGATCCCGATAAAGGATCCGAGGGGAAGAGTTATAGGT	600
TTTCGGTGGAAGGAGGATAGTAGAGGACAAATCTCCCAAGTACATAAACTC	
TCCAGACAGCAGGGTATTTAAAAGGGGGAGAACTTATTCGGTCTTTACG	700
AGGCAAAGGAGTATATAAAGGAAGAAGGATTTGCGATACTTGTGGAAGGG	
TACTTTGACCTTTTGAGACTTTTTTCCGAGGGAATAAGGAACGTTGTTGC	800
ACCCCTCGGTACAGCCCTGACCCAAAATCAGGCAAACCTCCTTTCCAAGT	
TCACAAAAAAGGTCTACATCCTTTACGACGGAGATGATGCGGGAAGAAAG	900
GCTATGAAAAGTGCCATTCCCCCTACTCCTCAGTGCAGGAGTGGAAGTTTA	
TCCCGTTTACCTCCCCGAAGGATACGATCCCGACGAGTTTATAAAGGAAT	1000
TCGGGAAAGAGGAATTAAGAAGACTGATAAACAGCTCAGGGGAGCTCTTT	
GAAACGCTCATAAAAACCGCAAGGGAAAACCTTAGAGGAGAAAACGCGTGA	1100
GTTTCAGGTATTATCTGGGCTTTATTTCCGATGGAGTAAGGCGCTTTGCTC	
TGGCTTCGGAGTTTTCACACCAAGTACAAAGTTCCTATGGAAATTTTATTA	1200
ATGAAAATTGAAAAAAATTCTCAAGAAAAAGAAATTAAACTCTCCTTTAA	
GGAAAAAATCTTCCTGAAAGGACTGATAGAATTAAAACCAAAAATAGACC	1300
TTGAAGTCCTGAACTTAAGTCCTGAGTTAAAGGAACTCGCAGTTAACGCC	
TTAAACGGAGAGGAGCATTACTTCCAAAAGAAGTTCTCGAGTACCAGGT	1400
GGATAACTTGGAGAACTTTTTAACAACATCCTTAGGGATTTACAAAAAT	
CTGGGAAAAAGAGGAAGAAAAGAGGGTTGAAAAATGTAAATACTTAATTA	1500
ACTTTAATAAATTTTTAGAGTTAGGA	

FIG. 50

MSSDIDELRREIDIVDVISSEYLNLEKVGSNYRTNCPFHPDDTPSFYVSPS	
KQIFKFCGCGVGDAIKFVSLYEDISYFEAALELAKRYGKKLDLEKISKD	100
EKVYVALDRVCDFYRESLLKNREASEYVKSRGIDPKVARKFDLGYAPSSE	
ALVKVLKENDLLEAYLETKNLLSPTKGVYRDLFLRRVVIPIKDPRGRVIG	200
FGGRRIVEDKSPKYINSPDSRVFKKGENLFGLYEAKYIKEEGFAILVEG	
YFDLLRLRFSEGIRNVVAPLGTALTQNQANLLSKFTKKVYILYDGD DAGRK	300
AMKSAIPLLLSAGVEVYPVYLP EGYDPDEFIKEFGKEELRRLINSSGELF	
ETLIK TARENLEEK TREFRYYLGFISDGVRRFALASEFHTKYKVPMEILL	400
MKIEKNSQEKEIKLSFKEKIFLKGLIELKPKIDLEVLNLSPELKE LAVNA	
LNGEEHLLPKEVLEYQVDNLEKLFNNILRDLQKSGKKRKKRGLKNVNT	498

FIG. 51

REPLACEMENT
SHEET

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ATGCAAGATACCGCTACCTGCAGTATTTGTCAGGGGACGGGATTCGTAAA	
GACCGAAGACAACAAGGTAAGGCTCTGCGAATGCAGGTTCAAGAAAAGGG	100
ATGTAAACAGGGAACTAAACATCCCAAAGAGGTACTGGAACGCCAACTTA	
GACACTTACCACCCCAAGAACGTATCCCAGAACAGGGCACTTTTGACGAT	200
AAGGGTCTTCGTCCACAACCTTCAATCCCGAGGAAGGGAAAGGGCTTACCT	
TTGTAGGATCTCCTGGAGTCGGCAAACTCACCTTGCGGTTGCAACATTA	300
AAAGCGATTTATGAGAAGAAGGGAATCAGAGGATACTTCTTCGATACGAA	
GGATCTAATATTCAGGTTAAAACACTTAATGGACGAGGGAAAGGATACAA	400
AGTTTTTAAAAACTGTCTTAAACTCACCGGTTTTGGTTCTCGACGACCTC	
GGTTCTGAGAGGCTCAGTGACTGGCAGAGGGAACATCTCTTACATAAT	500
CACTTACAGGTATAACAACCTTAAGAGCACGATAATAACCACGAATTACT	
CACTCCAGAGGGAAGAAGAGAGTAGCGTGAGGATAAGTGCGGATCTTGCA	600
AGCAGACTCGGAGAAAACGTAGTTTCAAAAATTTACGAGATGAACGAGTT	
GCTCGTTATAAAGGGTTCCGACCTCAGGAAGTCTAAAAAGCTATCAACCC	700
CATCT	

FIG. 52

MQDTATCSICQGTGFVKTEDNKVRLCECRFKKRDVNRELNIPKRYWNANL	
DTYHPKNVSQNRALLTIRVFVHNFNPEEGKGLTFVGSPGVGKTHLAVATL	100
KAIYEKKGIRGYFFDTKDLIFRLKHLMDGKDTKFLKTVLNSPVLVLDL	
GSERLSDWQRELISYIITYRYNNLKSTIITNYSLQREEESSVRISADLA	200
SRLGENVVSKIYEMNELLVIKGSDLRKS KKLSTPS	

FIG. 53

REPLACEMENT SHEET

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ATGAAAAAGATTGAAAATTTGAAGTGGAAAAATGTCTCGTTTAAAAGCCT	
GGAAATAGATCCCGATGCAGGTGTGGTTCTCGTTTCCGTGGAAAAATTCT	100
CCGAAGAGATAGAAGACCTTGTGCGTTTACTGGAGAAGAAGACGCGGTTT	
CGAGTCATCGTGAACGGTGTTCAAAAAAGTAACGGGGATCTAAGGGGAAA	200
GATACTTTCCCTTCTCAACGGTAATGTGCCTTACATAAAAGATGTTGTTT	
TCGAAGGAAACAGGCTGATTCTGAAAGTGCTTGGAGATTTGCGCGGGAC	300
AGGATCGCCTCCAACTCAGAAGCACGAAAAACAGCTCGATGAACTGCT	
GCCTCCCGGAACAGAGATCATGCTGGAGGTTGTGGAGCCTCCGGAAGATC	400
TTTTGAAAAAGGAAGTACCACAACCAGAAAAGAGAGAAGAACCAAAGGGT	
GAAGAATTGAAGATCGAGGATGAAAACCACATCTTTGGACAGAAACCAG	500
AAAGATCGTCTTCACCCCTCAAAAATCTTTGAGTACAACAAAAGACAT	
CGGTGAAGGGCAAGATCTTCAAAATAGAGAAGATCGAGGGGAAAAGAACG	600
GTCCTTCTGATTTACCTGACAGACGGAGAAGATTCTCTGATCTGCAAAGT	
CTTCAACGACGTTGAAAAGGTGCAAGGGAAAGTATCGGTGGGAGACGTGA	700
TCGTTGCCACAGGAGACCTCCTTCTCGAAAACGGGGAGCCCACCCTTTAC	
GTGAAGGGAATCACAAAACCTCCCGAAGCGAAAAGGATGGACAAATCTCC	800
GGTTAAGAGGGTGGAGCTCCACGCCCATACCAAGTTCAGCGATCAGGACG	
CAATAACAGATGTGAACGAATATGTGAAACGAGCCAAGGAATGGGGCTTT	900
CCCGCGATAGCCCTCACGGATCATGGGAACGTTTCAGGCCATACCTTACTT	
CTACGACGCGGCGAAAGAAGCTGGAATAAAGCCCATTTTCGGTATCGAAG	1000
CGTATCTGGTGAGTGACGTGGAGCCCGTCATAAGGAATCTCTCCGACGAT	
TCGACGTTTGGAGATGCCACGTTTCGTCTCGTCTCGACTTCGAGACGACGGG	1100
TCTCGACCCGCGAGGTGGATGAGATCATCGAGATAGGAGCGGTGAAGATAC	
AGGGTGGCCAGATAGTGGACGAGTACCACACTCTCATAAAGCCTTCCAGG	1200
GAGATCTCAAGAAAAAGTTCGGAGATCACCGGAATCACTCAAGAGATGCT	
GGAAAACAAGAGAAGCATCGAGGAAGTTCTGCCGGAGTTCCTCGGTTTTC	1300
TGGAAGATTCCATCATCGTAGCACACAACGCCAACTTCGACTACAGATTT	
CTGAGGCTGTGGATCAAAAAAGTGATGGGATTGGACTGGGAAAGACCCTA	1400
CATAGATACGCTCGCCCTCGCAAAGTCCCTTCTCAAACCTGAGAAGCTACT	
CTCTGGATTCCGTTGTGGAAAAGCTCGGATTGGGTCCCTTCCGGCACCAC	1500
AGGGCCCTGGATGACGCGAGGGTCACCGCTCAGGTTTTCTCAGGTTCTGT	
TGAGATGATGAAGAAGATCGGTATCACGAAGCTTTCAGAAATGGAGAAGT	1600
TGAAGGATACGATAGACTACACCGCGTTGAAACCCTTCCACTGCACGATC	
CTCGTTCAGAACAAAAAGGGATTGAAAAACCTATACAACTGGTTTCTGA	1700
TTCTTATATAAAGTACTTCTACGGTGTTCGAGGATCCTCAAAAGTGAGC	
TCATCGAGAACAGAGAAGGACTGCTCGTGGGTAGCGCGTGTATCTCCGGT	1800
GAGCTCGGACGTGCCGCCCTCGAAGGAGCGAGTGATTCAGAACTCGAAGA	
GATCGCGAAGTTCTACGACTACATAGAAGTCATGCCGCTCGACGTTATAG	1900
CCGAAGATGAAGAAGACCTAGACAGAGAAAGACTGAAAGAAGTGTACCGA	
AAACTCTACAGAATAGCGAAAAAATTGAACAAGTTCGTCTCATGACCGG	2000
TGATGTTTCAATTTCCCTCGATCCCGAAGATGCCAGGGGCAGAGCTGCACTT	
TGGCACCTCAGGGAAACAGAACTTCGAGAATCAGCCCGCACTCTACCTC	2100
AGAACGACCGAAGAAATGCTCGAGAAGGCGATAGAGATATTCGAAGATGA	
AGAGATCGCGAGGGGAAGTCGTGATAGAGAATCCCAACAGAATAGCCGATA	2200
TGATCGAGGAAGTGCAGCCGCTCGAGAAAAAATTCACCCGCCGATCATA	
GAGAACGCCGATGAAATAGTGAGAAACCTCACCATGAAGCGGGCGTACGA	2300
GATCTACGGTGATCCGCTTCCCGAAATCGTCCAGAAGCGTGTGGAAAAGG	

FIG. 54A

REPLACEMENT SHEET

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AACTGAACGCCATCATAAATCATGGATACGCCGTTCTCTATCTCATCGCT	2400
CAGGAGCTCGTTCAGAAATCTATGAGCGATGGTTACGTGGTTGGATCCAG	
AGGATCCGTCGGGTCTTCACTCGTGGCCAATCTCCTCGGAATAACAGAGG	2500
TGAATCCCCTACCACCACATTACAGGTGTCCAGAGTGCAAATACTTTGAA	
GTTGTCGAAGACGACAGATACGGAGCGGGTTACGACCTTCCCAACAAGAA	2600
CTGTCCAAGATGTGGGGCTCCTCTCAGAAAAGACGGCCACGGCATAACCGT	
TTGAAACGTTTCATGGGGTTCGAGGGTGACAAGGTCCCCGACATAGATCTC	2700
AACTTCTCAGGAGAGTATCAGGAACGTGCTCATCGTTTTGTGGAAGAACT	
CTTCGGTAAAGACCACGTCTATAGGGCGGGAACCATAAACACCATCGCGG	2800
AAAGAAGTGCGGTGGGTTACGTGAGAAGCTACGAAGAGAAAACCGGAAAG	
AAGCTCAGAAAGGCGGAAATGGAAAGACTCGTTTTCCATGATCACGGGAGT	2900
GAAGAGAACGACGGGTCAGCACCCAGGGGGGCTCATGATCATAACCGAAAG	
ACAAAGAAGTCTACGATTTCACTCCCATACAGTATCCAGCCAACGATAGA	3000
AACGCAGGTGTGTTTACCACGCACTTCGCATACGAGACGATCCATGATGA	
CCTGGTGAAGATAGATGCGCTCGGCCACGATGATCCCACTTTTCATCAAGA	3100
TGCTCAAGGACCTCACCGGAATCGATCCCATGACGATTCCCATGGATGAC	
CCCGATACGCTCGCCATATTCACTTCTGTGAAGCCTCTTGGTGTGGATCC	3200
CGTTGAGCTGGAAAGCGATGTGGGAACGTACGGAATTCGGGAGTTCGGAA	
CCGAGTTTGTGAGGGGAATGCTCGTTGAAACGAGACCAAAGAGTTTCGCC	3300
GAGCTTGTGAGAATCTCAGGACTGTACACCGGTACGGACGTCTGGTTGAA	
CAACGCACGTGATTGGATAAACCTCGGCTACGCCAAGCTCTCCGAGGTTA	3400
TCTCGTGTAGGGACGACATCATGAACTTCCTCATAACAAAGGAATGGAA	
CCGTCACCTTGCCCTCAAGATCATGGAAAACGTACAGGAAGGGAAAGGGTAT	3500
CACAGAAGAGATGGAGAGCGAGATGAGAAGGCTGAAGGTTCCAGAATGGT	
TCATCGAATCCTGTAAAAGGATCAAATATCTCTTCCCGAAAGCTCACGCT	3600
GTGGCTTACGTGAGTATGGCCTTCAGAATTGCTTACTTCAAGGTTCACTA	
TCCTCTTCAGTTTTACGCGGCGTACTTCACGATAAAAGGTGATCAGTTTCG	3700
ATCCGGTTCTCGTACTCAGGGGAAAAGAAGCCATAAAGAGGCGCTTGAGA	
GAACCTCAAAGCGATGCCTGCCAAAGACGCCAGAAGAAAAACGAAGTGAG	3800
TGTTCTGGAGGTTGCCCTGGAAATGATACTGAGAGGTTTTTCCTTCCTAC	
CGCCCGACATCTTCAAATCCGACGCGAAGAAATTTCTGATAGAAGGAAAC	3900
TCGCTGAGAATTCGGTTCAACAACTTCCAGGACTGGGTGACAGCGTTGC	
CGAGTCGATAATCAGAGCCAGGGAAGAAAAGCCGTTCACTTCGGTGGAAG	4000
ATCTCATGAAGAGGACCAAGGTCAACAAAAATCACATAGAGCTGATGAAA	
AGCCTGGGTGTTCTCGGGGACCTTCAGAGACGGAACAGTTCACGCTTTT	4100

C

FIG. 54B

REPLACEMENT SHEET

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MKKIENLKWKNVSFKSLEIDPDAGVVLVSVEKFSEEIEDLVRLLLEKKTRF	
RVIVNGVQKSNGDLRGKILSLLNGNVPYIKDVVFEGNRLILKVLGDFARD	100
RIASKLRSTKKQLDELLPPGTEIMLEVVEPPEDLLKKEVPQPEKREEPKG	
EELKIEDENHIFGQKPRKIVFTPSKIFEYNKKTSVKGKIFKIEKIEGKRT	200
VLLIYLTGDGEDSLICKVFNDVEKVEGKVSVDVIVATGDLLLENGEPTLY	
VKGITKLPEAKRMDKSPVKRVELHAHTKFSDQDAITDVNEYVKRAKEWGF	300
PAIALTDHGNVQAIPYFYDAAKEAGIKPIFGIEAYLVSDVEPVIRNLSDD	
STFGDATFVVLDFETTGLDPQVDEIIEIGAVKIQGGQIVDEYHTLIKPSR	400
EISRKSSEITGITQEMLLENKRSIEEVLPEFLGFLEDSIIVAHNANFDYRF	
LRLWIKKVMGLDWERPYPIDTLALAKSLLKLSYSLDSVVEKLGLGPFRHH	500
RALDDARVTAQVFLRFVEMMKIGITKLSEMEKLDKTIDYTALKPFHCTI	
LVQNKGLKNLYKLVSDSYIKYFYGVPRILKSELINREGLLVGSACISG	600
ELGRAALEGASDSELEEIAKFYDYIEVMPLDVIAEDEEDLDRERLKEVYR	
KLYRIAKKLNKFVVMTGDDVHFLDPEDARGRAALLAPQGNRNFNENQPALYL	700
RTTEEMLEKAIEIFEDEEIAREVVIENPNRIADMIEEVQPLEKKLHPPII	
ENADEIVRNLTMKRAYEIIYGDPLPEIVQKRVEKELNATINHGYAVLYLIA	800
QELVQKSMSDGYVVGSRGSSLVANLLGITEVNPPLPHYRCPECKYFE	
VVEDDRYGAGYDLPNKNCPRCGAPLRKDGHGIPFETFMGFEGDKVPDIDL	900
NFSGEYQERAHRFVEELFGKDHVYRAGTINTIAERSAVGYVRSYEEKTGK	
KLRKAEMERLVSMITGVKRTTGQHPGGLMIIPKDKEVYDFTPIQYPANDR	1000
NAGVFTTHFAYETIHDDLKIDALGHDDPTFIKMLKDLTGIDPMTIPMDD	
PDTLAI FSSVKPLGVD PVELESDVGTYGIPEFGTEFVRGMLVETRPKSFA	1100
ELVRISGLSHGTDVWLNNARDWINLGYAKLSEVISCRDDIMNFLIHKGME	
PSLAFKIMENVRKGKGITEEMESEMRRLKVPEWFIESCKRIKYLFPKAHA	1200
VAYVSMAFRIAYFKVHYPLQFYAAAYFTIKGDQFDPVLVLRGKEAIKRRLR	
ELKAMPAKDAQKKNEVSVLEVALEMILRGFSFLPPDIFKSDAKKFLIEGN	1300
SLRIPFNKLPGLGDSVAESIIRAREEKPFTSVEDLMKRTKVKNKHIELMK	
SLGVLGDLPETEQFTLF	1367

FIG. 55

REPLACEMENT
SHEET

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GTGCTCGCCATGATATGGAACGACACCGTTTTTTGCGTCGTAGACACAGA	
AACCACGGGAACCGATCCCTTTGCCGGAGACCGGATAGTTGAAATAGCCG	100
CTGTTCCCTGTCTTCAAGGGGAAGATCTACAGAAACAAAGCGTTTCACTCT	
CTCGTGAATCCCAGAATAAGAATCCCTGCGCTGATTCAGAAAGTTCACGG	200
TATCAGCAACATGGACATCGTGGAAGCGCCAGACATGGACACAGTTTACG	
ATCTTTTCAGGGATTACGTGAAGGGAACGGTGCTCGTGTTTCACAACGCC	300
AACTTCGACCTCACTTTTCTGGATATGATGGCAAAGGAAACGGGAAACTT	
TCCAATAACGAATCCCTACATCGACACACTCGATCTTTCAGAAGAGATCT	400
TTGGAAGGCCTCATTCTCTCAAATGGCTCTCCGAAAGACTTGGAATAAAA	
ACCACGATACGGCACCGTGCTCTTCCAGATGCCCTGGTGACCGCAAGAGT	500
TTTTGTGAAGCTTGTTGAATTTCTTGGTGAAAACAGGGTCAACGAATTCA	
TACGTGGAAAACGGGGG	567

FIG. 56

MLAMIWNDTVFCVVDTETTGTDPFAGDRIVEIAAVPVFKGKIYRNKAFHS	
LVNPRIRIPALIQKVHGISNMDIVEAPDMDTVYDLFRDYVKGTVLVFHNA	100
NFDLTFLDMMAKETGNFPITNPYIDTLDLSEEIFGRPHSLKWLSERLGIK	
TTIRHRALPDALVTARVFVKLVEFLGENRVNEFIRGKRG	189

FIG. 57

REPLACEMENT SHEET

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GTGGAAGTTCTTTACAGGAAGTACAGGCCAAAGACTTTTTCTGAGGTTGT	
CAATCAGGATCATGTGAAGAAGGCAATAATCGGTGCTATTCAGAAGAACA	100
GCGTGGCCACGATACATATTCGCCGGTCCGAGGGGAACGGGGAAGACT	
ACTCTTGCCAGAATTCTCGCAAATCCCTGAACTGTGAGAACAGAAAGGG	200
AGTTGAACCCTGCAATTCCTGCAGAGCCTGCAGAGAGATAGACGAGGGAA	
CCTTCATGGACGTGATAGAGCTCGACGCGGCCTCCAACAGAGGAATAGAC	300
GAGATCAGAAGAATCAGAGACGCCGTTGGATACAGGCCGATGGAAGGTAA	
ATACAAAGTCTACATAATAGACGAAGTTCACATGCTCACGAAAGAAGCCT	400
TCAACGCGCTCCTCAAAACACTCGAAGAACCCTCCTTCCCACGTCGTGTTT	
GTGCTGGCAACGACAAACCTTGAGAAGGTTCTTCCCACGATTATCTCGAG	500
ATGTCAGGTTTTTCGAGTTCAGAAACATTTCCCGACGAGCTCATCGAAAAGA	
GGCTCCAGGAAGTTGCGGAGGCTGAAGGAATAGAGATAGACAGGGGAAGCT	600
CTGAGCTTCATCGCAAAAAGAGCCTCTGGAGGCTTGAGAGACGCGCTCAC	
CATGCTCGAGCAGGTGTGGAAGTTCTCGGAAGGAAAGATAGATCTCGAGA	700
CGGTACACAGGGCGCTCGGGTTGATACCGATACAGGTTGTTTCGCGATTAC	
GTGAACGCTATCTTTTCTGGTGATGTGAAAAGGGTCTTACCAGTTCTCGA	800
CGACGTCTATTACAGCGGGAAGGACTACGAGGTGCTCATTTCAGGAAGCAG	
TCGAGGATCTGGTCGAAGACCTGGAAGGGGAGAGAGGGGTTTACCAGGTT	900
TCAGCGAACGATATAGTTTCAGGTTTCGAGACAACTTCTGAATCTTCTGAG	
AGAGATAAAGTTCGCCGAAGAAAAACGACTCGTCTGTAAAGTGGGTTTCGG	1000
CTTACATAGCGACGAGGTTCTCCACCACAAACGTTTCAGGAAAACGATGTC	
AGAGAAAAAAACGATAATTCAAATGTACAGCAGAAAGAAGAGAAGAAAGA	1100
AACGGTGAAGGCAAAAGAAGAAAAACAGGAAGACAGCGAGTTCGAGAAAC	
GCTTCAAAGAACTCATGGAAGAACTGAAAGAAAAGGGCGATCTCTCTATC	1200
TTTGTCGCTCTCAGCCTCTCAGAGGTGCAGTTTGACGGAGAAAAGGTGAT	
TATTTCTTTTGATTTCATCGAAAGCTATGCATTACGAGTTGATGAAGAAAA	1300
AACTGCCTGAGCTGGAAAACATTTTTTCTAGAAAACTCGGGAAAAAAGTA	
GAAGTTGAACTTCGACTGATGGGAAAAGAAGAAACAATCGAGAAGGTTTC	1400
TCAGAAGATCCTGAGATTGTTTGAACAGGAGGGA	

FIG. 58

MEVLYRKYPKTFSEVVNQDHSVKKAIIGAIQKNSVAHGYIFAGPRGTGKT	
TLARILAKSLNCENRKGVEPCNSCRACREIDEGTFMDVIELDAASNRGID	100
EIRRIDAVGYRPMEGKYKVYIIDEVHMLTKEAFNALLKTLEPPSHVVF	
VLATTNLEKVPPTIISRCQVFEFRNIPDELIEKRLQEVAAEGIEIDREA	200
LSFIAKRASGGLRDALTMLEQVWKFSEGGKIDLETVHRAALGLIPIQVVRDY	
VNAIFSGDVKRFTVLDDVYYSGKDYEVLIQEAVEDLVEDLERERGVYQV	300
SANDIVQVSRQLLNLLREIKFAEEKRLVCKVGSAYIATRFSTTNVQENDV	
REKNDNSNVQKKEKKETVKAKEEKQEDSEFEKRFKELMEELKEKGDLSE	400
FVALSLSEVQFDGEKVIIISFDSSKAMHYELMKKKLPELENIFSRKLGKKV	
EVELRLMGKEETIEKVSQKILRLFEQEG	478

FIG. 59

REPLACEMENT SHEET

66/83

ATGAAAGTAACCGTCACGACTCTTGAATTGAAAGACAAAATAACCATCGC	
CTCAAAAGCGCTCGCAAAGAAATCCGTGAAACCCATTCTTGCTGGATTTC	100
TTTTTCGAAGTGAAAGATGGAAATTTCTACATCTGCGCGACCGATCTCGAG	
ACCGGAGTCAAAGCAACCGTGAATGCCGCTGAAATCTCCGGTGAGGCACG	200
TTTTGTGGTACCAGGAGATGTCATTGAGAAGATGGTCAAGGTTCTCCCAG	
ATGAGATAACGGAACCTTTCTTTAGAGGGGGATGCTCTTGTTATAAGTTCT	300
GGAAGCACCGTTTTTCAGGATCACCACCATGCCCGCGGACGAATTTCCAGA	
GATAACGCCTGCCGAGTCTGGAATAACCTTCGAAGTTGACACTTCGCTCC	400
TCGAGGAAATGGTTGAAAAGGTCATCTTCGCCGCTGCCAAAGACGAGTTC	
ATGCGAAATCTGAATGGAGTTTTCTGGGAACCTCCACAAGAATCTTCTCAG	500
GCTGGTTGCAAGTGATGGTTTTGAGACTTGCACTTGCTGAAGAGCAGATAG	
AAAACGAGGAAGAGGCGAGTTTCTTGCTCTCTTTGAAGAGCATGAAAGAA	600
GTTCAAAACGTGCTGGACAACACAACGGAGCCGACTATAACGGTGAGGTA	
CGATGGAAGAAGGGTTTCTCTGTCGACAAATGATGTAGAAACGGTGATGA	700
GAGTGGTTCGACGCTGAATTTCCCGATTACAAAAGGGTGATCCCCGAACT	
TTCAAAACGAAAGTGGTGGTTTTCCAGAAAAGAACTCAGGGAATCTTTGAA	800
GAGGGTGATGGTGATTGCCAGCAAGGGAAGCGAGTCCGTGAAGTTCGAAA	
TAGAAGAAAACGTTATGAGACTTGTGAGCAAGAGCCCGGATTATGGAGAA	900
GTGGTCGATGAAGTTGAAGTTCAAAAAGAAGGGGAAGATCTCGTGATCGC	
TTTCAACCCGAAGTTCATCGAGGACGTTTTGAAGCACATTGAGACTGAAG	1000
AAATCGAAATGAACTTCGTTGATTCTACCAGTCCATGTCAGATAAATCCA	
CTCGATATTTCTGGATACCTTTACATAGTGATGCCCATCAGACTGGCA	1098

FIG. 60

MKVTVTTLLELKDKITIASKALAKKSVKPILAGFLFEVKDGNFYICATDLE	
TGVKATVNAAEISGEARFVVPGDVIQKMKVLPDEITELSLEGDALVISS	100
GSTVFRITTMPADEFPEITPAESGITFEVDTSLLEEMVEKVIFAAKDEF	
MRNLNGVFWELHKNLLRLVASDGFRLALAEEQIENEEEAFLSLKSMKE	200
VQNVLDNTTEPTITVRYDGRRVSLSTNDVETVMRVVDAEFPDYKRVIPET	
FKTKVVVSRKELRESLKRMVIAASKGSESVKFEIEENVMLVSKSPDYGE	300
VVDEVEVQKEGEDLVIAFNPKFIEDVLKHIETEEIEMNFVDSTSPCQINP	
LDISGYLYIVMPIRLA	366

FIG. 61

REPLACEMENT SHEET

67/83

ATGCCAGTCACGTTTCTCACAGGTACTGCAGAACTCAGAAGGAAGAATT	
GATAAAGAACTCCTGAAGGATGGTAACGTGGAGTACATAAGGATCCATC	100
CGGAGGATCCCGACAAGATCGATTTTCATAAGGTCTTTACTCAGGACAAAG	
ACGATCTTTTCCAACAAGACGATCATTTGACATCGTCAATTTTCGATGAGTG	200
GAAAGCACAGGAGCAGAAGCGTCTCGTTGAACTTTTGAAAAACGTACCGG	
AAGACGTTTCATATCTTCATCCGTTCTCAAAAAACAGGTGGAAAGGGAGTA	300
GCGCTGGAGCTTCCGAAGCCATGGGAAACGGACAAGTGGCTTGAGTGGAT	
AGAAAAGCGCTTCAGGGAGAATGGTTTGCTCATCGATAAAGATGCCCTTC	400
AGCTGTTTTTCTCCAAGGTTGGAACGAACGACCTGATCATAGAAAGGGAG	
ATTGAAAACTGAAAGCTTATTCGAGGACAGAAAGATAACGGTAGAAGA	500
CGTGGAAGAGGTCGTTTTTACCTATCAGACTCCGGGATACGATGATTTTT	
GCTTTGCTGTTTCCGAAGGAAAAAGGAAGCTCGCTCACTCTCTTCTGTCG	600
CAGCTGTGGA AAAACACAGAGTCCGTGGTGATTGCCACTGTCCTTGCGAA	
TCACTTCTTGATCTCTTCAAATCCTCGTTCTTGTGACAAAGAAAAGAT	700
ACTACACCTGGCCTGATGTGTCCAGGGTGTCCAAAGAGCTGGGAATTCCC	
GTTCCCTCGTGTGGCTCGTTTCCTCGGTTTCTCCTTTAAGACCTGGAAATT	800
CAAGGTGATGAACCACCTCCTCTACTACGATGTGAAGAAGGTTAGAAAGA	
TACTGAGGGATCTCTACGATCTGGACAGAGCCGTGAAAAGCGAAGAAGAT	900
CCAAAACCGTTCTTCCACGAGTTCATAGAAGAGGTGGCACTGGATGTATA	
TTCTCTTCAGAGAGATGAAGAA	972

FIG. 62

MPVTFLTGTAEQKEELIKKLLKDG NVEYIRIHPEDPDKIDFIRSLLR TK	
TIFS NKTIIDIVNFDEWKAQE QKRLVELLKNVPEDVHIFIRSQKTGGKGV	100
ALELPKPWETDKWLEWIEKRFR ENGLLIDKDALQLFFSKVGTNDLI IERE	
IEKLKAYSEDRKITVEDVEEVVFTYQTPGYDDFCFAVSEGKRKLAHSLLS	200
QLWKTTESVVIATVLANHFLDLFKILVLVTKKRYTWPDVSRVSKELGIP	
VPRVARFLGFSFKTWKFKVMNHL LYYDVKKVRKILRDLYDLDR AVKSEED	300
PKPFFHEFIEEVALDVYSLQRDEE	

FIG. 63

REPLACEMENT
SHEET

68/83

ATGAACGATTTGATCAGAAAGTACGCTAAAGATCAACTGGAACTTTGAA	
AAGGATCATAGAAAAGTCTGAAGGAATATCCATCCTCATAAATGGAGAAG	100
ATCTCTCGTATCCGAGAGAAGTATCCCTTGAACCTCCCGAGTACGTGGAG	
AAATTTCCCCCGAAGGCCTCGGATGTTCTGGAGATAGATCCCGAGGGGGA	200
GAACATAGGCATAGACGACATCAGAACGATAAAGGACTTCCTGAACTACA	
GCCCCGAGCTCTACACGAGAAAGTACGTGATAGTCCACGACTGTGAAAGA	300
ATGACCCAGCAGGCGGCGAACGCGTTTCTGAAGGCCCTTGAAGAACCACC	
AGAATACGCTGTGATCGTTCTGAACACTCGCCGCTGGCATTATCTACTGC	400
CGACGATAAAGAGCCGAGTGTTTCAGAGTGGTTGTGAACGTTCCAAAGGAG	
TTCAGAGATCTCGTGAAAGAGAAAATAGGAGATCTCTGGGAGGAACTTCC	500
ACTTCTTGAGAGAGACTTCAAAACGGCTCTCGAAGCCTACAACTTGGTG	
CGGAAAAACTTTCTGGATTGATGGAAAGTCTCAAAGTTTTTGAGACGGAA	600
AAACTCTTGAAAAAGGTCCTTTCAAAGGCCTCGAAGGTTATCTCGCATG	
TAGGGAGCTCCTGGAGAGATTTTCAAAGGTGGAATCGAAGGAATTCTTTG	700
CGCTTTTTTGATCAGGTGACTAACACGATAACAGGAAAAGACGCGTTTCTT	
TTGATCCAGAGACTGACAAGAATCATTTCTCCACGAAAACACATGGGAAAG	800
CGTTGAAGATCAAAAAAGCGTGTCTTTCTCGATTCAATTCTCAGGGTGA	
AGATAGCGAATCTGAACAACAACACTCTGATGAACATCCTCGCGATA	900
CACAGAGAGAGAAAGAGAGGTGTCAACGCTTGGAGC	

FIG. 64

MNDLIRKYAKDQLETLKRIIEKSEGISILINGEDLSYPREVSLELPEYVE	
KFPPKASDVLEIDPEGENIGIDDIRTIKDFLNYSPELYTRKYVIVHDCER	100
MTQQAANAFLEKALEEPPEYAVIVLNTRRWHYLLPTIKSRVFRVVVNPKE	
FRDLVKEKIGDLWEELPLLERDFKTALEAYKLGAEKLSGLMESLKVLETE	200
KLLKKVLSKGLEGYLACRELLERFSKVESKEFFALFDQVTNTITGKDAFL	
LIQRLTRIILHENTWESVEDKSVSFLDSILRVKIANLNNKLTLMNILAIH	300
RERKRGVNAWS	

FIG. 65

REPLACEMENT
SHEET

69/83

ATGTCTTTCTTCAACAAGATCATACTCATAGGAAGACTCGTGAGAGATCC
CGAAGAGAGATACACGCTCAGCGGAACTCCAGTCACCACCTTCACCATAG 100
CGGTGGACAGGGTTCCCAGAAAGAACGCGCCGGACGACGCTCAAACGACT
GATTTCTTCAGGATCGTCACCTTTGGAAGACTGGCAGAGTTCGCTAGAAC 200
CTATCTCACCAAAGGAAGGCTCGTTCTCGTCGAAGGTGAAATGAGAATGA
GAAGATGGGAAACACCCACTGGAGAAAAGAGGGTATCTCCGGAGGTTGTC 300
GCAAACGTTGTTAGATTTCATGGACAGAAAACCTGCTGAAACAGTTAGCGA
GACTGAAGAGGAGCTGGAAATACCGGAAGAAGACTTTTCCAGCGATACCT 400
TCAGTGAAGATGAACCACCATT

FIG. 66

MSFFNKIILIGRLVRDPEERYTLSGTPVTTFTIAVDRVPRKNAPDDAQT
DFFRIVTFGRLAEFARTYLTGRLVLVEGEMRMRRWETPTGEKRVSPVV 100
ANVVRFMDRKPAETVSETEEELEIPEEDFSSDTFSEDEPPF

FIG. 67

REPLACEMENT SHEET

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ATGCGTGTTCCTCCCGCACAACCTTAGAGGCCGAAGTTGCTGTGCTCGGAAG	
CATATTGATAGATCCGTCGGTAATAAACGACGTTCTTGAAATTTTGAGCC	100
ACGAAGATTTCTATCTGAAAAAACACCAACACATCTTCAGAGCGATGGAA	
GAGCTTTACGACGAAGGAAAACCGGTGGACGTGGTTTCCGTCTGTGACAA	200
GCTTCAAAGCATGGGAAAACCTCGAGGAAGTAGGTGGAGATCTGGAAGTGG	
CCCAGCTCGCTGAGGCTGTGCCCAGTTCTGCACACGCACTTCACTACGCG	300
GAGATCGTCAAGGAAAAATCCATTCTGAGGAACTCATTGAGATCTCCAG	
AAAAATCTCAGAAAGTGCCTACATGGAAGAAGATGTGGAGATCCTGCTCG	400
ACAACGCAGAAAAGATGATCTTCGAGATCTCAGAGATGAAAACGACAAAA	
TCCTACGATCATCTGAGAGGCATCATGCACCGGGTGTGTTGAAAACCTGGA	500
GAACCTCAGGGAAAGAGCCAACTTATAGAACCCGGTGTGCTCATAACGG	
GACTACCAACGGGATTCAAAGTCTGGACAAACAGACCACAGGGTTCCAC	600
AGCTCCGATCTGGTGATAATAGCAGCGAGACCCTCCATGGGAAAAACCTC	
CTTCGCACTCTCAATAGCGAGGAACATGGCTGTCAATTTCGAAATCCCCG	700
TCGGAATATTTCAGTCTCGAGATGTCCAAGGAACAGCTCGCTCAAAGACTA	
CTCAGCATGGAGTCCGGTGTGGATCTTTACAGCATCAGAACAGGATACCT	800
GGATCAGGAGAAGTGGGAAAGACTCACAATAGCGGCTTCTAAACTCTACA	
AAGCACCCATAGTTGTGGACGATGAGTCACTCCTCGATCCGCGATCGTTG	900
AGGGCAAAAGCGAGAAGGATGAAAAAAGAATACGATGTAAAAGCCATTTT	
TGTCGACTATCTCCAGCTCATGCACCTGAAAGGAAGAAAAGAAAGCAGAC	1000
AGCAGGAGATATCCGAGATCTCGAGATCTCTGAAGCTCCTTGCGAGGGAA	
CTCGACATAGTGGTGATAGCGCTTTCACAGCTTTCGAGGGCCGTAGAACA	1100
GAGAGAAGACAAAAGACCGAGGCTGAGTGACCTCAGGGAATCCGGTGCGA	
TAGAACAGGACGCAGACACAGTCATCTTCATCTACAGGGAGGAATATTAC	1200
AGGAGCAAAAAATCCAAAGAGGAAAGCAAGCTTCACGAACCTCACGAAGC	
TGAAATCATAATAGGTAAACAGAGAAACGGTCCCGTTGGAACGATCACTC	1300
TGATCTTCGACCCCAGAACGGTTACGTTCCATGAAGTCGATGTGGTGCAT	
TCA	1353

FIG. 68

MRVPPHNLEAEVAVLGSILIDPSVINDVLEILSHEDFYLKKHQHIFRAME	
ELYDEGKPVDDVSVCDKLQSMGKLEEVGGDLEVAQLAEAVPSSAHALHYA	100
EIVKEKSILRKLI EISRKISESAYMEEDVEILLDNAEKMIFEISEMKTTK	
SYDHLRGIMHRVFENLENFRERANLIEPGVLITGLPTGFKSLDKQTTGFH	200
SSDLVIAARPSMGKTSFALSIARNMAVNFEIPVGIFSLEMSKEQLAQR	
LSMESGVDLYSIRTGYLDQEKWERLTIAASKLYKAPIVVDDDESLLDPRSL	300
RAKARRMKKEYDVKAIFVDYLQLMHLKGRKESRQQEISEISRLKLLARE	
LDIVVIALSQLSRAVEQREDKRPRLSDLRESGAIEQDADTVIFIYREEYY	400
RSKKSKEESKLHEPHEAEI IIGKQRNGPVGITITLIFDPRTVTFHEVDVH	
S	451

FIG. 69

REPLACEMENT SHEET

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GTGATTCCTCGAGAGGTCATCGAGGAAATAAAAGAAAAGGTTGACATCGT	
AGAGGTCATTTCCGAGTACGTGAATCTTACCCGGGTAGGTTCCCTCCTACA	100
GGGCTCTCTGTCCCTTTCATTCAGAAACCAATCCTTCTTTCTACGTTTCAT	
CCGGGTTTGAAGATATAACCATTGTTTCGGCTGCGGTGCGAGTGGAGACGT	200
CATCAAATTTCTTCAAGAAATGGAAGGGATCAGTTTCCAGGAAGCGCTGG	
AAAGACTTGCCAAAAGAGCTGGGATTGATCTTTCTCTCTACAGAACAGAA	300
GGGACTTCTGAATACGGAAAAATACATTCGTTTGTACGAAGAAACGTGGAA	
AAGGTACGTCAAAGAGCTGGAGAAATCGAAAGAGGCAAAAGACTATTTAA	400
AAAGCAGAGGCTTCTCTGAAGAAGATATAGCAAAGTTCGGCTTTGGGTAC	
GTCCCCAAGAGATCCAGCATCTCTATAGAAGTTGCAGAAGGCATGAACAT	500
AACACTGGAAGAACTTGTTCAGATACGGTATCGCGCTGAAAAAGGGTGATC	
GATTCGTTGATAGATTTCGAAGGAAGAATCGTTGTTCCAATAAAGAACGAC	600
AGTGGTCATATTGTGGCTTTTGGTGGGCGTGCTCTCGGCAACGAAGAACC	
GAAGTATTTGAACTCTCCAGAGACCAGGTATTTTTCGAAGAAGAAGACCC	700
TTTTTCTCTTCGATGAGGCGAAAAAAGTGGCAAAAGAGGTTGGTTTTTTC	
GTCATCACCGAAGGCTACTTCGACGCGCTCGCATTTCAGAAAGGATGGAAT	800
ACCAACGGCGGTTCGCTGTTCTTGGGGCGAGTCTTCAAGAGAGGGCGATTC	
TAAAACCTTTCGGCGTATTCGAAAAACGTCATACTGTGTTTCGATAATGAC	900
AAAGCAGGCTTCAGAGCCACTCTCAAATCCCTCGAGGATCTCCTAGACTA	
CGAATTCAACGTGCTTGTGGCAACCCCTCTCCTTACAAAGACCCAGATG	1000
AACTCTTTCAGAAAGAAGGAGAAGGTTTCATTGAAAAAGATGCTGAAAAAC	
TCGCGTTTCGTTTCGAATATTTTCTGGTGACGGCTGGTGAGGTCTTCTTTGA	1100
CAGGAACAGCCCCGCGGGTGTGAGATCCTACCTTTCTTTCTCCTCAAAGGTT	
GGGTCCAAAAGATGAGAAGGAAAGGATATTTGAAACACATAGAAAATCTC	1200
GTGAATGAGGTTTCATCTTCTCTCCAGATACCAGAAAACCAGATTTTGAA	
CTTTTTTTGAAAGCGACAGGTCTAACACTATGCCTGTTCATGAGACCAAGT	1300
CGTCAAAGGTTTACGATGAGGGGAGAGGACTGGCTTATTTGTTTTTTGAAC	
TACGAGGATTTGAGGGAAAAGATTCTGGAAGTGGACTTAGAGGTACTGGA	1400
AGATAAAAACGCGAGGGAGTTTTTCAAGAGAGTCTCACTGGGAGAAGATT	
TGAACAAAGTCATAGAAAACCTCCCAAAGAGCTGAAAGACTGGATTTTTT	1500
GAGACAATAGAAAGCATTCCTCCTCCAAAGGATCCCGAGAAATTCCTCGG	
TGACCTCTCCGAAAAGTTGAAAATCCGACGGATAGAGAGACGTATCGCAG	1600
AAATAGATGATATGATAAAGAAAGCTTCAAACGATGAAGAAAGGCGTCTT	
CTTCTCTCTATGAAAGTGGATCTCCTCAGAAAAATAAAGAGGAGG	1695

FIG. 70

REPLACEMENT SHEET

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MIPREVIEEIKEKVDIVEVISEYVNLTRVGSSYRALCPFHSETNPSFYVH	
PGLKIYHCFGCGASGDVIKFLQEMEGISFQEALERLAKRAGIDLSLYRTE	100
GTSEYGKYIRLYEETWKRYVKELEKSKEAKDYLSRGFSEEDIAKFGFGY	
VPKRSSISIEVAEGMNITLEELVRYGIALKKGDRFVDRFEGRIVVPIKND	200
SGHIVAFGGRALGNEEPKYLNSPETRYFSKKKTLFLFDEAKKVAKEVGFF	
VITEGYFDALAFRKDGIPTAVAVLGASLSREAILKLSAYSKNVILCFDND	300
KAGFRATLKSLEDLLDYEFNVLVATPSPYKDPDELFOKEGEGSLKKMLKN	
SRSFEYFLVTAGEVFFDRNSPAGVRSYLSFLKGWVQKMRKGYLKHIEENL	400
VNEVSSSLQIPENQILNFFESDRSNTMPVHETKSSKVYDEGRGLAYLFLN	
YEDLREKILELDLEVLEDKNAREFFKRVS LGEDLNKVIENFPKELKDWIF	500
ETIESIPPPKDPEKFLGDLSEKLKIRRIERIAEIDDMIKKASNDEERRL	
LLSMKVDLLRKIKRR	565

FIG. 71

ATGGCTCTACACCCGGCTCACCCCTGGGGCAATAATCGGGCACGAGGCCGT	
TCTCGCCCTCCTTCCCCGCCTCACCGCCAGACCCTGCTCTTCTCCGGCC	100
CCGAGGGGGTGGGGCGGCGCACCGTGCCCGCTGGTACGCCTGGGGGCTC	
AACCGCGGCTTCCCCCGCCCTCCCTGGGGGAGCACCCGGACGTCTCTCGA	200
GGTGGGGCCCAAGGCCCGGGACCTCCGGGGCCGGGCGAGGTGCGGCTGG	
AGGAGGTGGCGCCCCCTCTTGAGTGGTGCTCCAGCCACCCCGGGAGCGG	300
GTGAAGGTGGCCATCCTGGACTCGGCCACCTCCTCACCGAGGCCGCGC	
CAACGCCCTCCTCAAGCTCCTGGAGGAGCCCCCTCCTACGCCCGCATCG	400
TCCTCATCGCCCCAAGCCGCGCCACCTCCTCCCCACCCTGGCCTCCCGG	
GCCACGGAGGTGGCATTGCCCCCGTGCCCGAGGAGGCCCTGCGCGCCCT	500
CACCCAGGACCCGGAGCTCCTCCGCTACGCCGCGGGGCCCCGGGCGCC	
TCCTTAGGGCCCTCCAGGACCCGGAGGGGTACCGGGCCCGCATGGCCAGG	600
GCGCAAAGGGTCTTGAAAGCCCCGCCCTGGAGCGCCTCGCTTTGCTTCG	
GGAGCTTTTGGCCGAGGAGGAGGGGGTCCACGCCCTCCACGCCGTCCTAA	700
AGCGCCCGGAGACCTCCTTGCCCTGGAGCGGGCGCGGGAGGCCCTGGAG	
GGGTACGTGAGCCCCGAGCTGGTCCTCGCCCGGCTGGCCTTAGACTTAGA	800
GACA	

FIG. 72

MALHPAHPGAIIIGHEAVLALLPRLTAQTLLFSGPEGVGRRTVARWYAWGL	
NRGFPPPSLGEHPDVLEVGPKARDLRGRAEVRLEEVAPLLEWCSSHPRER	100
VKVAILDSAHLLETEAAANALLKLEEPSYARIVLIAPSRATLLPTLASR	
ATEVAFAPVPEEALRALTQDPELLRYAAGAPGRLLRALQDPEGYRARMAR	200
AQRVLKAPPLERLALLRELLAE EEGVHALHAVLKRPEHLLALERAREALE	
GYVSPELVLARLALDLET	268

FIG. 73

REPLACEMENT SHEET

73/83

ATGCTGGACCTGAGGGAGGTGGGGGAGGCGGAGTGGAAGGCCCTAAAGCC	
CCTTTTGGAAGCGTGCCCGAGGGCGTCCCGTCCCTCCTGGACCCTA	100
AGCCAAGCCCCCTCCCGGGCGGCCTTCTACCGGAACCGGGAAAGGCGGGAC	
TTCCCCACCCCCAAGGGGAAGGACCTGGTGCGGCACCTGGAAAACCGGGC	200
CAAGCGCCTGGGGCTCAGGCTCCCGGGCGGGGTGGCCCAGTACCTGGCCT	
CCCTGGAGGGGGACCTCGAGGCCCTGGAGCGGGAGCTGGAGAAGCTTGCC	300
CTCCTCTCCCCACCCCTCACCCCTGGAGAAGGTGGAGAAGGTGGTGGCCCT	
GAGGCCCCCCCCCTCACGGGCTTTGACCTGGTGCGCTCCGTCTGGAGAAGG	400
ACCCAAGGAGGCCCTCCTGCGCCTAGGCGGCCTCAAGGAGGAGGGGGAG	
GAGCCCCCTCAGGCTCCTCGGGGCCCTCTCCTGGCAGTTCGCCCTCCTCGC	500
CCGGGCCTTCTTCCTCCTCCGGGAAAACCCCAAGGCCCAAGGAGGAGGACC	
TCGCCCCGCTCGAGGCCACCCCTACGCCGCCCGCCGCGCCCTGGAGGCG	600
GCGAAGCGCCTCACGGAAGAGGCCCTCAAGGAGGCCCTGGACGCCCTCAT	
GGAGGCGGAAAAGAGGGCCAAGGGGGGGAAAGACCCGTGGCTCGCCCTGG	700
AGGCGGCGGTCTCCGCCTCGCCCCGTTGA	

FIG. 74

MVIAFTGDPFLAREALLEEARLRGLSRFTEPTPEALAQALAPGLFGGGGA	
MLDLREVGEAEWKALKPLLESVPEGVPVLLLDPKPSPSRAAFYRNRERRD	100
FPTPKGKDLVRHLENRAKRLGLRPLPGGVAQYLASLEGDLEALERELEKLA	
LLSPPLTLEKVEKVVALRPPLTGFDLVRVLEKDPKEALLRLGGLKEEGE	200
EPLRLLGALSWQFALLARAFLLRENPRPKEEDLARLEAHPYAARRALEA	
AKRLTEEALKEALDALMEAEKRAKGKDPWLALEAAVLRRLAR	292

FIG. 75

REPLACEMENT
SHEET

74/83

ATGGCTCGAGGCCTGAACCGCGTTTTCTCATCGGCGCCCTCGCCACCCG	
GCCGGACATGCGCTACACCCCGCGGGGCTCGCCATTTTGGACCTGACCC	100
TCGCCGGTCAGGACCTGCTTCTTTCCGATAACGGGGGGGAACCGGAGGTG	
TCCTGGTACCACCGGGTGAGGCTCTTAGGCCGCCAGGCGGAGATGTGGGG	200
CGACCTCTTGGACCAAGGGCAGCTCGTCTTCGTGGAGGGCCGCCTGGAGT	
ACCGCCAGTGGGAAAGGGAGGGGGAGAAGCGGAGCGAGCTCCAGATCCGG	300
GCCGACTTCCGGACCCCCTGGACGACCGGGGGAAGAAGCGGGCGGAGGAC	
AGCCGGGGCCAGCCCAGGCTCCGCGCCGCCCTGAACCAGGTCTTCCTCAT	400
GGGCAACCTGACCCGGGACCCGGAACCTCCGCTACACCCCCAGGGCACCG	
CGGTGGCCCGGCTGGGCCTGGCGGTGAACGAGCGCCGCCAGGGGGCGGAG	500
GAGCGCACCCACTTCGTGGAGGTTCAAGCCTGGCGCGACCTGGCGGAGTG	
GGCCGCCGAGCTGAGGAAGGGCGACGGCCTTTTCGTGATCGGCAGGTTGG	600
TGAACGACTCCTGGACCAGCTCCAGCGGCGAGCGGCGCTTCCAGACCCGT	
GTGGAGGCCCTCAGGCTGGAGCGCCCCACCCGTGGACCTGCCCAGGCCTG	700
CCCAGGCCGGCGGAACAGGTCCCGCGAAGTCCAGACGGGTGGGGTGGACA	
TTGACGAAGGCTTGAAGACTTTCGCGCGGAGGAGGATTTGCCGTTTTGA	800
GCACGAA	

FIG. 76

MARGLNRVFLIGALATRPDMRYTPAGLAILDLTLAQDLLLLSDNGGEPEV	
SWYHRVRLLG RQAEMWGDLLDQGQLVFVEGRLEYRQWEREGEKRSELQIR	100
ADFLDPLDDRGGKKRAEDSRGQPRRLRAALNQVFLMGNLTRDPELRYTPQGT	
AVARLGLAVNERRQGAERTHFVEVQAWRDLAEWAAELRKGDGLFVIGRL	200
VNDSWTSSSGERRFQTRVEALRLERPTRGPAQACPGRNRNRSREVQTGGVD	
IDEGLEDFPPEEDLPF	266

FIG. 77

REPLACEMENT SHEET

75/83

AATTCCGACATTTCAATTGAATCGTTTATTCCGCTTGAAAAAGAAGGCAA	
GTTGCTCGTTGATGTGAAAAGACCGGGGAGCATCGTACTGCAGGCGCGCT	100
TTTTCTCTGAAATCGTGAAAAAACTGCCGCAACAAACGGTGGAATCGAA	
ACGGAAGACAACCTTTTGTACGATCATCCGCTCGGGGCACTCAGAATTCCG	200
CCTCAATGGGCTAAACGCCGACGAATATCCGCGCCTGCCGCAAATTGAAG	
AAGAAAACGTGTTTCAAATCCCGGCTGATTTATTGAAAACCGTGATTCGG	300
CAAACGGTGTTTCGCCGTTTCTACATCGGAAACGCGCCCAATCTTGACAGG	
TGTCAACTGGAAAGTTGAACATGGCGAGCTTGTCTGCACAGCGACCGACA	400
GTCATCGCTTAGCCATGCGCAAAGTGAAAATTGAGTCGGAAAATGAAGTA	
TCATACAACGTCGTCATCCCTGGAAAAAGTCTTAATGAGCTCAGCAAAT	500
TTTGGATGACGGCAACCACCCGGTGACATCGTCATGACAGCCAATCAAG	
TGCTATTTAAGGCCGAGCACCTTCTCTTTTCCCGGCTGCTTGACGGC	600
AACTATCCGGAGACGGCCCGCTTGATTCCAACAGAAAGCAAAACGACCAT	
GATCGTCAATGCAAAAGAGTTTCTGCAGGCAATCGACCGAGCGTCCTTGC	700
TTGCTCGAGAAGGAAGGAACAACGTTGTGAAACTGACGACGCTTCCTGGA	
GGAATGCTCGAAATTTCTTCGATTTCTCCGAGATCGGGAAAGTGACGGAG	800
CAGCTGCAAACGGAGTCTCTTGAAGGGGAAGAGTTGAACATTTTCGTTTCA	
CGCGAAATATATGATGGACGCGTTGCGGGCGCTTGATGGAAACAGACATTT	900
CAAATCAGCTTCACTGGGGCCATGCGGCCGTTCTGTGCGCCCGCTTCA	
ACCGATTTCGATGCTTCAGCTCATTTTGCCGGTGAGAACATAT	992

FIG. 78

NSDISIIIESFIPLEKEGKLLVDVKRPGSIVLQARFFSEIVKKLPQQTVEI	
ETEDNFLTIIRSGHSEFRLNGLNADEYPRLPQIEEENVFQIPADLLKTVI	100
RQTVFAVSTSETRPILTGVDNWKVEHGELVCTATDSHRLAMRKVKIIESEN	
EVSYNVVIIPGKSLNELSKIILDDGNHPVDIVMTANQVLFKAHLLFFSRL	200
LDGNYPETARLIPTESKTTMIVNAKEFLQAIDRASLLAREGRNNVVKLT	
LPGGMLEISSISPEIGKVTEQLQTESLEGEELNISFSAKYMMDALRALDG	300
TDIQISFTGAMRPFLRLPLHTDSMLQLILPVRTY	

FIG. 79

REPLACEMENT
SHEET

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ATGATTAACCGCGTCATTTTGGTCGGCAGGTAAACGAGAGATCCGGAGTT	
GCGTTACACTCCAAGCGGAGTGGCTGTTGCCACGTTTACGCTCGCGGTCA	100
ACCGTCCGTTTACAAATCAGCAGGGCGAGCGGGAAACGGATTTTATTCAA	
TGTGTCGTTTGGCGCCGCCAGGCGGAAAACGTCGCCAACTTTTGA AAAA	200
GGGGAGCTTGGCTGGTGTGTCGATGGCCGACTGCAAACCCGCAGCTATGAAA	
ATCAAGAAGGTCGGCGTGTGTACGTGACGGAAGTGGTGGCTGATAGCGTC	300
CAATTTCTTGAGCCGAAAGGAACGAGCGAGCAGCGAGGGGCGACAGCAGG	
CGGCTACTATGGGGATCCATTCCCATTTCGGGCAAGATCAGAACCACCAAT	400
ATCCGAACGAAAAAGGGTTTGGCCGCATCGATGACGATCCTTTTCGCCAAT	
GACGGCCAGCCGATCGATATTTCTGATGATGATTTGCCGTTT	492

FIG. 80

MINRVILVGRLTRDPELRYTPSGVAVATFTLAVNRPFTNQSYENQEGRRV	
YVTEVVADSVQFLEPKGTSEQRGATAGGYQGERETDFIQCVVWRRQAEN	100
VANFLKKGSLAGVDGRLQTRGDPFPFGQDQNHQYPNEKGFGRIDDDPFAN	
DGQPIDISDDDLPF	164

FIG. 81

REPLACEMENT SHEET

77/83

ATGCTGGAACGCGTATGGGGAAACATTGAAAAACGGCGTTTTTCTCCCCT	
TTATTTATTATACGGCAATGAGCCGTTTTTTATTAACGGAAACGTATGAGC	100
GATTGGTGAACGCAGCGCTTGGCCCCGAGGAGCGGGAGTGGAACCTGGCT	
GTGTACGACTGCGAGGAAACGCCGATCGAGGCGGCGCTTGAGGAGGCCGA	200
GACGGTGCCGTTTTTTCGGCGAGCGGCGTGTCAATTCTCATCAAGCATCCAT	
ATTTTTTTACGTCTGAAAAAGAGAAGGAGATCGAACATGATTTGGCGAAG	300
CTGGAGGCGTACTTGAAGGCGCCGTCGCCGTTTTTCGATCGTCGTCTTTTT	
CGCGCCGTACGAGAAGCTTGATGAGCGAAAAAAATTACGAAGCTCGCCA	400
AAGAGCAAAGCGAAGTCGTCATCGCCGCCCGCTCGCCGAAGCGGAGCTG	
CGTGCCTGGGTGCGGCGCCGCATCGAGAGCCAAGGGGCGCAAGCAAGCGA	500
CGAGGCGATTGATGTCCTGTTGCGGCGGGCCGGGACGCAGCTTTCGCCT	
TGGCGAATGAAATCGATAAATTGGCCCTGTTTGCCGGATCGGGCGGAACC	600
ATCGAGGCGGCGGCGGTTGAGCGGCTTGTCGCCCGCACGCCGGAAGAAAA	
CGTATTTGTGCTTGTCGAGCAAGTGGCGAAGCGCGACATTCCAGCAGCGT	700
TGCAGACGTTTTTATGATCTGCTTGAAAAACAATGAAGAGCCGATCAAAATT	
TTGGCGTTGCTCGCCGCCCATTTCCGCTTGCTTTCGCAAGTGAAATGGCT	800
TGCCTCCTTAGGCTACGGACAGGCGCAAATTGCTGCGGCGCTCAAGGTGC	
ACCCGTTCCGCGTCAAGCTCGCTCTTGCTCAAGCGGCCCGCTTCGCTGAC	900
GGAGAGCTTGCTGAGGCGATCAACGAGCTCGCTGACGCCGATTACGAAGT	
GAAAAGCGGGGCGGTGATCGCCGTTGGCCGTTGAGCTGCTTCTGATGC	1000
GCTGGGGCGCCCGCCCGGCGCAAGCGGGGCGCCACGGCCGGCGG	

FIG. 82

MLERVWGNIEKRRFSPLYLLYGNEPFLLTETYERLVNAALGPEEREWNLA	
VYDCEETPIEAALEEAETVPFFGERRVILIKHPYFFTSEKEKEIEHDLAK	100
LEAYLKAPSPFSIVVFFAPYEKLDERKKITKLAKSEQSEVVIAAPLAEAE	
RAWVRRRIESQGAQASDEAIDVLLRRAGTQLSALANEIDKLALFAGSGGT	200
IEAAAVERLVARTPEENVFVLVEQVAKRDI PAALQTFYDLLENNEEPIKI	
LALLAAHFRLLSQVKWLASLGYGQAQIAAALKVHPFRVKLALAQAARFAD	300
GELAEAINELADADYEVKSGAVDRRLAVELLMRWGARPAQAGRHGR	

FIG. 83

REPLACEMENT
SHEET

78/83

ATGCGATGGGAACAGCTAGCGAAACGCCAGCCGGTGGTGGCGAAAATGCT	
GCAAAGCGGCTTGGA AAAAGGGCGGATTTCTCATGCGTACTTGTTTGAGG	100
GGCAGCGGGGACGGGCAAAAAGCGGCCAGTTTGTTGTTGGCGAAACGT	
TTGTTTTGTCTGTCCCCAATCGGAGTTTCCCCGTGTCTAGAGTGCCGCAA	200
CTGCCGGCGCATCGACTCCGGCAACCACCCTGACGTCCGGGTGATCGGCC	
CAGATGGAGGATCAATCAAAAAGGAACAAATCGAATGGCTGCAGCAAGAG	300
TTCTCGAAAACAGCGGTTCGAGTCGGATAAAAAAATGTACATCGTTGAGCA	
CGCCGATCAAATGACGACAAGCGCTGCCAACAGCCTTCTGAAATTTTTTG	400
AAGAGCCGCATCCGGGGACGGTGGCGGTATTGCTGACTGAGCAATACCAC	
CGCCTGCTAGGGACGATCGTTTCCCGCTGTCAAGTGCTTTCGTTCCGGCC	500
GTTGCCGCCGGCAGAGCTCGCCCAGGGACTTGTCGAGGAGCACGTGCCGT	
TGCCGTTGGCGCTGTTGGCTGCCCATTGACAAACAGCTTCGAGGAAGCA	600
CTGGCGCTTGCCAAAGATAGTTGGTTTGCCGAGGCGCGAACATTAGTGCT	
ACAATGGTATGAGATGCTGGGCAAGCCGGAGCTGCAGCTTTTGTTTTTCA	700
TCCACGACCGCTTGTTTCCGCATTTTTTGGAAAGCCATCAGCTTGACCT	
GGACTTG	757

FIG. 84

MRWEQLAKRQPVVAKMLQSGLEKGRISHAYLFEGQRGTGKKAASLLLA KR	
LFCLSPIGVSPCLECRNCRRIDSGNHPDVRVIGPDGGSIKKEQIEWLQQE	100
FSKTAVESDKKMYIVEHADQMTTSAANSLLKFLEEPHPGTVAVLLTEQYH	
RLLG TIVSRCQVLSFRPLPPAELAQGLVEEHVPLPLALLAAHLTNSFEEA	200
LALAKDSWFAEARTLVLQWYEMLGKPELQLLFFIHDRLPHPFLESHQLDL	
GL	252

FIG. 85

REPLACEMENT SHEET

79/83

GTGGCATACCAAGCGTTATATCGCGTGTTTCGGCCGCAGCGCTTTGCGGA	
CATGGTCGGCCAAGAACACGTGACCAAGACGTTGCAAAGCGCCCTGCTTC	100
AACATAAAATATCGCACGCTTACTTATTTTCCGGCCCGCGCGGTACAGGA	
AAAACGAGCGCAGCGAAAATTTTCGCCAAGGCGGTCAACTGTGAACAGGC	200
GCCAGCGGCGGAGCCATGCAATGAGTGTCCAGCTTGCCTCGGCATTACGA	
ATGGAACGGTTCCCGATGTGCTGGAAATTGACGCTGCTTCCAACAACCGC	300
GTCGATGAAATTCGTGATATCCGTGAGAAGGTGAAAATTTGCGCCAACGTC	
GGCCCGCTACAAAGTGTATATCATCGACGAGGTGCATATGCTGTGATCG	400
GTGCGTTTAAACGCGCTGTTGAAAACGTTGGAGGAGCCGCCGAAAACACGTC	
ATTTTCATTTTGGCCACGACCGAGCCGCACAAAATTCGGCGACGATCAT	500
TTCCCGCTGCCAACGGTTCGATTTTCGCCGCATCCCGCTTCAGGCGATCG	
TTTCACGGCTAAAGTACGTCGCAAGCGCCCAAGGTGTCGAGGCGTCAGAT	600
GAGGCATTGTCCGCCATCGCCCGTGCTGCAGACGGGGGGATGCGCGATGC	
GCTCAGCTTGCTTGATCAAGCCATTTGCTTCAGCGACGGGAAACTTCGGC	700
TCGACGACGTGCTGGCGATGACCGGGGCTGCATCATTGCGCCTTATCG	
AGCTTCATCGAAGCCATCCACCGCAAAGATACAGCGGCGGTTCTTCAGCA	800
CTTGGAACGATGATGGCGCAAGGGAAAGATCCGCATCGTTTGGTTGAAG	
ACTTGATTTTGTACTATCGCGATTTATTGCTGTACAAAACCGCTCCCTAT	900
GTGGAGGGAGCGATTCAAATTGCTGTCGTTGACGAAGCGTTCACTTCACT	
GTCGGAATGATTCCGGTTTCCAATTTATACGAGGCCATCGAGTTGCTGA	1000
ACAAAAGCCAGCAAGAGATGAAGTGGACAAACCACCCGCGCCTTCTGTTG	
GAAGTGGCGCTTGTGAAACTTTGCCATCCATCAGCCGCCGCCCGCTCGCT	1100
GTCGGCTTCCGAGTTGGAACCGTTGATAAAGCGGATTGAAACGCTGGAGG	
CGGAATTGCGGCGCCTGAAGGAACAACCGCCTGCCCTCCGTCGACCGCC	1200
GCGCCGGTGAAAAAACTGTCCAAACCGATGAAAACGGGGGGATATAAAGC	
CCCGGTTGGCCGCATTTACGAGCTGTTGAAACAGGCGACGCATGAAGATT	1300
TAGCTTTGGTGAAAGGATGCTGGGCGGATGTGCTCGACACGTTGAAACGG	
CAGCATAAAGTGTGCGACGCTGCCTTGCTGCAAGAGAGCGAGCCGTTGC	1400
AGCGAGCGCCTCAGCGTTTGTATTAAATTCAAATACGAAATCCACTGCA	
AAATGGCGACCGATCCCACAAGTTCGGTCAAAGAAAACGTCGAAGCGATT	1500
TTGTTTGAGCTGACAAACCGCCGCTTTGAAATGGTAGCCATTCCGGAGGG	
AGAATGGGGAAAAATAAGAGAAGAGTTCATCCGCAATAAGGACGCCATGG	1600
TGGAAAAAAGCGAAGAAGATCCGTTAATCGCCGAAGCGAAGCGGCTGTTT	
GGCGAAGAGCTGATCGAAATTAAAGAA	1677

FIG. 86

REPLACEMENT
SHEET

80/83

VAYQALYRVFRPQRFADMVGQEHVTKTLQSALLQHKISHAYLFSGPRGTG	
KTSAAKIFAKAVNCEQAPAAEPCNECPACLGITNGTVPDVLEIDAASNRR	100
VDEIRDIREKVKFAPTSARYKVYIIDEVHMLSIGAFNALLKTLEPPKHV	
IFILATTEPHKIPATIIISRCQRFDFRRIPLQAIVSRLKYVASAQGVEASD	200
EALSAIARAADGGMRDALSLDQAI SFSDGKLRLDDVLAMTGAASFAALS	
SFIEAIHRKDTAAVLQHLETMMAQKDPHRLVEDLILYYRDLLLYKTAPY	300
VEGAIQIAVVDEAFTSLSEMIPVSNLYEAI ELLNKSQQEMKWTNHPRLLL	
EVALVKLCHPSAAAPSL SASELEPLIKRIETLEAELRRLKEQPPAPPSTA	400
APVKKLSKPMKTGGYKAPVGRIYELLKQATHEDLALVKGCWADVLDTLKR	
QHKVSHAALLQESEPVAASASAFVLKFKYEIHCKMATDPTSSVKENVEAI	500
LFELTNRRFEMVAIPEGEWGKIREEFIRNKDAMVEKSEEDPLIAEAKRLF	
GEELIEIKE	559

FIG. 87

REPLACEMENT SHEET

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ATGGTGACAAAAGAGCAAAAAGAGCGGTTTCTCATCCTGCTTGAGCAGCT	
GAAGATGACGTCGGACGAATGGATGCCGATTTTCGTGAGGCAGCCATTC	100
GCAAAGTCGTGATCGATAAAGAGGAGAAAAGCTGGCATTTTTATTTTCAG	
TTCGACAACGTGCTGCCGGTTCATGTATACAAAACGTTTGCCGATCGGCT	200
GCAGACGGCGTTCGCCCATATCGCCGCCGTCCGCCATACGATGGAGGTCG	
AAGCGCCGCGCGTAAC TGAGGCGGATGTGCAGGCGTATTGGCCGCTTTGC	300
CTTGCCGAGCTGCAAGAAGGCATGTGCCCGCTTGTCGATTGGCTCAGCCG	
GCAGACGCCTGAGCTGAAAGGAAACAAGCTGCTTGTCGTTGCCCGCCATG	400
AAGCGGAAGCGCTGGCGATCAAACGGCGGTTCCGCCAAAAAATCGCTGAT	
GTGTACGCTTCGTTTGGGTTTCCCCCCTTCAGCTTGACGTCAGCGTCGA	500
GCCGTCCAAGCAAGAAATGGAACAGTTTTTGCGCAAAAACAGCAAGAGG	
ACGAAGAGCGAGCGCTTGCTGTACTGACCGATTTAGCGAGGGAAGAAGAA	600
AAGGCCGCGTCTGCGCCGCCGTCCGGTCCGCTTGTCATCGGCTATCCGAT	
CCGCGACGAGGAGCCGGTGCGGCGGCTTGAAACGATCGTCGAAGAAGAGC	700
GGCGCGTCGTTGTGCAAGGCTATGTATTGACGCCGAAGTGAGCGAATTA	
AAAAGCGGCCGCACGCTGTTGACCATGAAAATCACAGATTACACGAACTC	800
GATTTTAGTCAAAATGTTCTCGCGCGACAAAGAGGACGCCGAGCTTATGA	
GCGGCGTCAAAAAGGCATGTGGGTGAAAGTGCGCGGCAGCGTGCAAAAC	900
GATACGTTTCGTCCGTGATTTGGTCATCATCGCCAACGATTTGAACGAAAT	
CGCCGCAAACGAACGGCAAGATACGGCGCCGGAAGGGGAAAAGAGGGTGC	1000
AGCTCCATTTGCATACCCCGATGAGCCAAATGGACGCGGTCACCTCGGTG	
ACAAAATCATTGAGCAAGCGAAAAAATGGGGGCATCCGGCGATCGCCGT	1100
CACCGACCATGCCGTTGTTTCAGTCGTTTCCGGAGGCCACAGCGCGGCGA	
AAAAACACGGCATGAAGGTCATTTACGGCCTTGAGGCGAACATCGTCGAC	1200
GATGGCGTGCCGATCGCCTACAATGAGACGCACCGCCGTCTTTCGGAGGA	
AACGTACGTCGTCTTTGACGTCGAGACGACGGGCCTGTCCGGCTGTGTACA	1300
ATACGATCATTGAGCTGGCGGCGGTGAAAGTGAAAGACGGCGAGATCATC	
GACCGATTTCATGTCGTTTGCCAACCCTGGACATCCGTTGTCGGTGACAAC	1400
GATGGAGCTGACTGGGATCACCGATGAGATGGTGAAAGACGCCCCGAAGC	
CGGACGAGGTGCTAGCCCGTTTTGTGACTGGGCGGCGATGCGACGCTT	1500
GTTGCCACAAACGCCAGCTTTGACATCGGTTTTTTAAACGCGGGCCTCGC	
TCGCATGGGGCGCGGCAAAATCGCGAATCCAGTCATCGATACGCTCGAGC	1600
TGGCCCGTTTTTTTATACCCGGATTTGAAAAACCATCGGCTCAATACATTG	
TGCAAAAAATTTGACATTGAATTGACGCAGCATACCGCGCCATCTACGA	1700
CGCGGAGGCGACCGGGCATTTGCTTATGCGGCTGTTGAAGGAAGCGGAAG	
AGCGCGGCATACTGTTTCATGACGAATTAAACAGCCGCACGCACAGCGAA	1800
GCGTCCTATCGGCTTGCGCGCCCGTTCCATGTGACGCTGTTGGCGCAAAA	
CGAGACTGGATTGAAAAATTTGTTCAAGCTTGTGTCATTGTGCGACATTC	1900
AATATTTTACCGTGTGCCGCGCATCCCGCGCTCCGTGCTCGTCAAGCAC	
CGCGACGGCCTGCTTGTCGGCTCGGGCTGCGACAAAGGAGAGCTGTTTGA	2000
CAACTTGATCCAAAAGGCGCCGGAAGAAGTCGAAGACATCGCCCGTTTTT	
ACGATTTTCTTGAAGTGATCCGCCGACGTGTACAAGCCGCTCATCGAG	2100
ATGGATTATGTGAAAGACGAAGAGATGATCAAAAACATCATCCGCAGCAT	
CGTCGCCCTTGGTGAGAAGCTTGACATCCCGGTTGTCGCCACTGGCAACG	2200

FIG. 88A

REPLACEMENT SHEET

82/83

TCCATTACTTGAACCCAGAAGATAAAATTTACCGGAAAATCTTAATCCAT	
TCGCAAGGCGGGGCGAATCCGCTCAACCGCCATGAACTGCCGGATGTATA	2300
TTTCCGTACGACGAATGAAATGCTTGACTGCTTCTCGTTTTTAGGGCCGG	
AAAAAGCGAAGGAAATCGTCGTTGACAACACGCAAAAAATCGCTTCGTTA	2400
ATCGGCGATGTCAAGCCGATCAAAGATGAGCTGTATACGCCGCGCATTGA	
AGGGGCGGACGAGGAAATCAGGGAAATGAGCTACCGGCGGGCGAAGGAAA	2500
TTTACGGCGACCCGTTGCCGAACTTGTTGAAGAGCGGCTTGAGAAGGAG	
CTAAAAAGCATCATCGGCCATGGCTTTGCCGTCATTTATTTGATCTCGCA	2600
CAAGCTTGTGAAAAAATCGCTCGATGACGGCTACCTTGTCGGGTTCGCGCG	
GATCGGTCGGCTCGTCGTTTGTCGCGACGATGACGGAAATCACCGAGGTC	2700
AATCCGCTGCCGCGCATTACGTTTGCCCGAACTGCAAGCATTCGGAGTT	
CTTTAACGACGGTTTCAGTCGGCTCAGGGTTTGATTTGCCGGATAAAAACT	2800
GCCCGCGATGTGGGACGAAATACAAGAAAGACGGGCACGACATCCCGTTT	
GAGACGTTTCTCGGCTTTAAAGGCGACAAAGTGCCGGATATCGACTTGAA	2900
CTTTTCCGGCGAATACCAGCCGCGCGCCCACTATACGAAAGTGCTGT	
TTGGCGAAGACAACGTCTACCGCGCCGGACGATTGGCACGGTCGCTGAC	3000
AAAACGGCGTACGGATTTGTCAAAGCGTATGCGAGCGACCATAACTTAGA	
GCTGCGCGGCGCGGAAATCGACGGCTCGCGGCTGGCTGCACCGGGGTGAA	3100
GCGGACGACCGGGCAGCATCCGGGCGGCATCATCGTCGTCCCGGATTATA	
TGGAAATTTACGATTTTACGCCGATTCAATATCCGGCCGATGACACGTCC	3200
TCTGAATGGCGGACGACCCATTTGACTTCCATTCGATCCACGACAATTT	
GTTGAAGCTCGATATTCTCGGGCACGACGATCCGACGGTCATTTCGATGC	3300
TGCAAGATTTAAGCGGCATCGATCCGAAAACGATCCCGACCGACGACCCG	
GATGTGATGGGCATTTTCAGCAGCACCGAGCCGCTTGCGGTTACGCCGGA	3400
GCAAATCATGTGCAATGTCGGCACGATCGGCATTCGGGAGTTTGGCACGC	
GCTTCGTTTCGGCAAATGTTGGAAGAGACAAGGCCAAAAACGTTTTCCGAA	3500
CTCGTGCAAATTTCCGGCTTGTCGCACGGCACCGATGTGTGGCTCGGCAA	
CGCGCAAGAGCTCATTCAAACGGCACGTGTACGTTATCGGAAGTCATCG	3600
GCTGCCGCGACGACATTATGGTCTATTTGATTTACCGCGGGCTCGAGCCG	
TCGCTCGCTTTTAAATCATGGAATCCGTGCGCAAAGGAAAAGGCTTAAC	3700
GCCGGAGTTTGAAGCAGAAATGCGCAAACATGACGTGCCGGAGTGGTACA	
TCGATTCATGCAAAAAAATCAAGTACATGTTCCCGAAAGCGCACGCCGCC	3800
GCCTACGTGTTAATGGCGGTGCGCATCGCCTACTTTAAGGTGCACCATCC	
GCTTTTGTATTACGCGTCGTACTTTACGGTGCGGGCGGAGGACTTTGACC	3900
TTGACGCCATGATCAAAGGATCACCCGCCATTTCGCAAGCGGATTGAGGAA	
ATCAACGCCAAAGGCATTCAGGCGACGGCGAAAGAAAAAAGCTTGCTCAC	4000
GGTTCTTGAGGTGGCCTTAGAGATGTGCGAGCGCGGCTTTTCCTTTAAAA	
ATATCGATTTGTACCGCTCGCAGGCGACGGAATTCGTCATTGACGGCAAT	4100
TCTCTCATTCGCCCGTTCAACGCCATTCCGGGGCTTGGGACGAACGTGGC	
GCAGGCGATCGTGCGCGCCCGCGAGGAAGGCGAGTTTTTGTGCAAGGAGG	4200
ATTTGCAACAGCGCGGCAAATTGTGCAAAACGCTGCTCGAGTATCTAGAA	
AGCCGCGGCTGCCTTGACTCGCTTCCAGACCATAACCAGCTGTGCTGTT	4300

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FIG. 88B

REPLACEMENT SHEET

83/83

MVTKEQKERFLILLEQLKMTSDEWMPHFREAAIRKVVIDKEEKSWHFFYFQ	
FDNVLPVHVYKTFADRLQTAFRHIAAVRHTMEVEAPRVTEADVQAYWPLC	100
LAELQEGMSPLVDWLSRQTPELKGNKLLVVARHEAEALAIKRRFAKKIAD	
VYASFGFPPLQLDVSVEPSKQEMEQLAQKQOEDEERALAVLTDLAREEE	200
KAASAPPSGPLVIGYPIRDEEPVRRLETIVEEERRVVVQGYVFDAEVSEL	
KSGRTLTLTKITDYTNSILVKMFSRDKEDAELMSGVKKGMWVKVRGSVQN	300
DTFVRDLVLIANDLNEIAANERQDTAPEGEKRVELHLHTPMSQMDAVTSV	
TKLIEQAKKWGHPAIAVTDHAVVQSFPEAYSAAKKHGMKVIYGLEANIVD	400
DGVPIAYNETHRRLSEETYVVFVDVETGLSAVYNTIIELA AVKVKGDEII	
DRFMSFANPGHPLSVTTMELTGITDEMVKDAPKPDEVLARFVDWAGDATL	500
VAHNASFDIGFLNAGLARMGRGKIANPVIDTLELARFLYPDLKNHRLNTL	
CKKFDTIELTQHHRAIYDAEATGHLLMRLLEKEAEERGILFHDELNSRTHSE	600
ASYRLARPFHVTLTLLAQNETGLKNLFLKLVSLSHIQYFHRVPRIPRSVLVKH	
RDGLLVGSGCDKGELFDNLIQKAPEEVEDIARFYDFLEVHPPDVYKPLIE	700
MDYVKDEEMIKNIIRSIVALGEKLDIPVVATGNVHYLNPEDKIYRKILIH	
SQGGANPLNRHEL PDVYFRTTNEMLD CFSFLGPEKAKEI VDNTO KIASL	800
IGDVKPIKDELYTPRIEGADEEIREMSYRRAKEIYGDPLPKLVEERLEKE	
LKSIIGHGFAVIYLI SHKLVKKSLDDGYLVGSRGSGSVGSSFVATMTEITEV	900
NPLPPHYVCPNCKHSEFFNDGSGVSGFDLPDKNCPRCGTTYKKDGHDI PF	
ETFLGFKGDKVPDIDLNFSGEYQ PRAHNYTKVLFGEDNVYRAGTIGTVAD	1000
KTAYGFVKAYASDHNLELRGAEIDL AAGCTGVKRTTGQHPGGIIVVPDYM	
EIYDFTPIQYPADDTSSSEWRTHFDFHSHIDNLLKLDILGHDDPTVIRML	1100
QDLSGIDPKTIPTDDPDVMGIFSSTEPLGVTPEQIMCNVGTIGIPEFGTR	
FVRQMLEETRPKTFSELVQISGLSHGTDVWLGNAQELIQNGTCTLSEVIG	1200
CRDDIMVYLIYRGLEPSLAFKIMESVRKGKGLTPEFEAEMRKHDVPEWYI	
DSCKKIKYMFPAKAAAYVLM AVRIAYFKVHHPLLYASYFTVRAEDFDL	1300
DAMIKGSPAIRKRIEEINAKGIQATAKEKSLTVLEVALEM CERGF S FKN	
IDLYRSQATEFVIDGNSLI PPFNAIPGLGTNVAQAIVRAREEGEFLSKED	1400
LQQRGKLSKTLLEYLESRGCLDSLPHNQLSLF	

FIG. 89